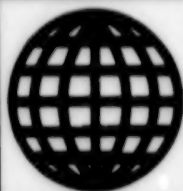


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22 September 1994



**FOREIGN
BROADCAST
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JPRS Report

Central Eurasia

***Military Affairs
Military Digest
No 1, July 1994***

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Central Eurasia

Military Affairs

Military Digest

No 1, July 1994

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Bon Voyage!

94UM0564A Moscow ARMEYSKIY SBORNIK
in Russian No 1, Jul 94 (signed to press
30 Jun 94) pp 2-11

[Individual articles by Colonel-General Mikhail Petrovich Kolesnikov, chief of Armed Forces General Staff, First Deputy Minister of Defense of Russian Federation; Colonel-General Vladimir Magomedovich Semenov, Commander-in-Chief, Russian Federation Armed Forces Ground Troops; Colonel-General of Aviation Petr Stepanovich Deynekin, Commander-in-Chief, Russian Federation Air Force; Colonel-General Yevgeniy Nikolayevich Podkolzin, Commander, Russian Federation Armed Forces Airborne Troops; Colonel-General of Aviation Viktor Alekseyevich Prudnikov, Commander-in-Chief, Russian Federation Armed Forces Air Defense Troops; and Colonel-General Vladimir Timofeyevich Churanov, chief of Russian Federation Armed Forces Rear Services; photographs of all are included]

[Text] Colonel-General Mikhail Petrovich Kolesnikov, chief of Armed Forces General Staff, First Deputy Minister of Defense of Russian Federation

Biographical note

Born 30 June 1939 in the city of Yeysk, Krasnodar Kray. Completed Omsk Tank Engineering School in 1959. Began troop service in position of platoon commander, then commanded a company and battalion. Appointed regimental commander in 1975 after completing Military Academy of Armored Troops. Division Chief of Staff and Deputy Commander from 1977. Tank division Commander from 1979. Completed USSR Armed Forces General Staff Military Academy in 1983. From 1983 Corps Commander, then Army Commander in Transcaucasus Military District. Chief of Staff and First Deputy Commander of Siberian Military District from 1987. Chief of Staff and First Deputy Commander-in-Chief of Southern Sector from 1988. Chief of Main Staff and First Deputy Commander-in-Chief of Ground Troops from 1990. Deputy Chief of USSR Armed Forces General Staff from 1991. First Deputy Chief of Russian Federation Armed Forces General Staff from June 1992. Appointed Chief of Russian Federation Armed Forces General Staff by Russian Federation Presidential Edict of 23 December 1992.

Publication of a number of military journals was discontinued as of 1 July 1994. Their subject matter will be covered by ARMEYSKIY SBORNIK, a new scientific, military-technical and practical-methods journal of the Russian Federation Ministry of Defense.

ARMEYSKIY SBORNIK is meant for officer personnel above all at the tactical echelon. It is called upon to disseminate objective information about our state's policy on military organizational development and about combat and special training of troops and to raise problems of modern combined arms battle theory and practice, problems of the methodology of training personnel of all branches and combat arms and of higher military educational institutions, problems of unit and subunit logistic support and of military economics, and questions of servicemen's social and legal protection, military-patriotic

and military education, sociological research and the psychology of the military collective.

Day-to-day activity of the ARMEYSKIY SBORNIK editorial staff will be built on the foundation of Russia's laws and with consideration for provisions of our state's military doctrine, requirements of Minister of Defense orders, instructions of the Chief of the General Staff, suggestions of commanders in chief of branches of the Russian Federation Armed Forces, and readers' wishes.

Articles to be published in the journal's pages must conform to the defensive direction of unit and subunit combat training and to missions being accomplished by the Russian Federation Armed Forces in this connection.

We recently celebrated the second anniversary of the establishment of the Russian Armed Forces. A very great deal of work has been accomplished during this time. Its results were assessed by the Russian Federation President in a Message to the Federal Assembly in which he noted that the Armed Forces are combat ready and capable of performing their assigned missions. That assessment of the Supreme Commander obligates us to a great deal and at the same time attests to the correctness of approaches chosen by the Ministry of Defense to ensuring our homeland's security.

Army reform continues. The primary measures which must be accomplished for this have been worked out on the basis of the Law "On Defense" and reflected in the concept and plan for organizational development of the Russian Federation Armed Forces. They include upgrading the Armed Forces structure and makeup, reforming the Ministry of Defense military-technical policy and the principle of manpower acquisition, and the upgrading of combat and mobilization readiness...

As a founder of ARMEYSKIY SBORNIK, I believe that articles on these problems will occupy a worthy place in pages of the new publication. It is especially important now to explain intelligibly the requirements of guidance documents, provisions of field manuals and combined-arms regulations, and complex issues of military theory and practice and to show military science's role in the search for and approval of new approaches for accomplishing missions of mobilization readiness and combat training and for developing tactics.

The entire military-political situation changed considerably in connection with the disintegration of the Warsaw Pact Organization and Soviet Union and formation of new sovereign states along the former USSR's borders. Consequently, the Russian Armed Forces are faced with new missions. Thus, the existing geopolitical situation brought about changes in the situation of military districts on Russian territory. Many of them now have become border districts. This required upgrading their structure and the procedure for manpower acquisition and training. In particular, the impossibility (for well-known reasons) of establishing a troop grouping along the entire border, as previously was the case, required that we make the principle of mobile defense the basis of Armed Forces organizational development. Its realization presumes the presence of

small but rather powerful mobile general purpose forces ready for prompt employment where a real threat to Russian security arises.

The military press can and must influence changes occurring in the troops. In accordance with its profile and direction of subject matter, ARMEYSKIY SBORNIK has to objectively reflect the progress of units' and subunits' fulfillment of government guidelines and of Russian Federation minister of defense orders and directives aimed at achieving quality indicators in accomplishing tasks of defense organizational development and in ensuring guarantees of the state's reliable security.

Military-technical policy and the outfitting of the troops with the latest weapons and equipment and with modern battle management, communications, intelligence and EW assets also is a priority direction of Armed Forces' organizational development. And it is the task of the new journal to become a genuine rostrum of foremost experience in the Russian Army in improving officers' technical and specialized training and mastering new equipment and its skillful use under modern battle conditions.

It is common knowledge that we have gone over to a mixed method of Armed Forces manpower acquisition. In the current year 150,000 contract personnel will come into the troops. In determining tasks for 1994, the Minister of Defense demanded that they be sent to fill combat positions above all. A list of very scarce specialties which determine subunit and unit combat effectiveness has been approved and skill requirements, to which candidates being accepted under contract must conform, have been established for each specialty. In order for the servicemen who have come to serve under contract to feel comfortable where they are as quickly as possible, it is necessary to devote attention constantly in pages of ARMEYSKIY SBORNIK to problems of their combat training and routine.

Military-legal reform in the Army and assurance of servicemen's legal and social protection also are among the basic directions of Russian Federation Armed Forces organizational development which demand special attention from the military press. The fact is that there are living people—officers and warrant officers with their families and first-term personnel—behind all the plans and figures of structural changes and troop reassignments being carried out under military reform. Concern for them is our duty and sacred obligation.

Eleven laws and more than 100 other normative-legal acts in the area of our defense organizational development already have been adopted and are in effect, and new ones are being drawn up. A mechanism is to be created to the full extent in the near term for realizing the benefits, guarantees and compensations established by law for servicemen, persons discharged from military service and their families. It is planned to strengthen legal protection of servicemen and Armed Forces civilian personnel based on constitutional principles. In particular, a military law practice is being established. In other words, above all Law is coming to replace ideology in the Armed Forces. This is why a special section should be introduced in ARMEYSKIY SBORNIK to cover problems of legal and social

protection of servicemen and their families so that officers and warrant officers receive exhaustive advice on various questions of military-legal legislation.

A session of the Russian Federation Ministry of Defense Collegium was held in April of this year which examined the question "On measures to strengthen military-patriotic education of servicemen and the youth in the interests of the Russian Federation Armed Forces." There was very anxious talk at the Collegium session about negative processes in our society connected with a loss of spiritual values and moral reference points and about the extremely difficult situation amidst the youth and very acute problems arising in this connection both for society as a whole as well as for the Armed Forces. The fact is, the Army senses more acutely than anyone else how much danger there is from spiritual degeneration and contempt for patriotism and for the idea of serving the homeland.

This is why one of the new journal's most important tasks (along with coverage of troop combat training) is to devote very serious attention to the military-patriotic education of officers and warrant officers and to the revival of good, useful Russian Army traditions.

ARMEYSKIY SBORNIK is being started in the period of preparation for celebrating the Great Victory semicentennial. Propagandizing Great Patriotic War experience and the expertise and courage our officers and men displayed in battles for the Motherland's independence, and educating today's defenders of the homeland on these examples gain special urgency in this connection.

Today the Armed Forces have entered the second stage of their reform, which will be concluded in 1995. I believe its tasks will be accomplished despite the difficulty of the country's economic situation. Success in this important matter depends on many components. One unquestionably is to keep our servicemen constantly, reliably informed about all those problems being resolved in the Armed Forces. Therefore ARMEYSKIY SBORNIK is called upon always to be in step with life, to publish pertinent, instructive articles about new things originating in the troops, and to demonstrate all the complexity, responsibility and importance to the country of the labor of those who bear the burden of military service.

I would like to wish the editorial staff collective creative successes and for ARMEYSKIY SBORNIK to become a reliable assistant to officers and all military professionals in their noble cause of serving the homeland. Bon voyage!

Colonel-General Vladimir Magomedovich Semenov, Commander-in-Chief, Russian Federation Armed Forces Ground Troops

Biographical note

Born 8 June 1940 in aul of Khurzuk, Karachayevo-Cherkass Autonomous Oblast, Stavropol Kray. Completed Baku Higher Combined-Arms Command School in 1962, Frunze Military Academy in 1970 and the General Staff Military Academy in 1979. Served in various command positions. Appointed commander, Transbaykal Military District in 1988. Commander-in-Chief of Ground Troops from August 1991.

The history of the combined arms journal VOYENNY VESTNIK is linked inseparably with the establishment, development and improvement of the Ground Troops. For over 70 years it was a faithful companion of commanders of platoons, companies, batteries, and maneuver and artillery battalions. In its pages motorized riflemen, tankers and specialists of Engineer Troops, air defense and NBC protection always could obtain advice and methods recommendations, derive new knowledge, become familiar with useful practical initiatives, and learn about foremost views of military science.

We hope the new publication, the journal ARMEYSKIY SBORNIK, also will gain popularity among military readers of the Ground Troops.

We have a great deal to accomplish. Under conditions of a budget deficit, for example, it is necessary not only to preserve the existing level of Ground Troops combat readiness, but also for each one in his own specific place to proceed further and strive for even higher indicators. There are no "classified" ways to achieve success. In my view, one recipe is apropos here: do not fear rough work. Initiative, conscientious labor and honesty are those moral criteria which determine the content of so-called effective approaches in organizing combat training.

The Person is primary in everything, and doubly so in military affairs. Much depends on his convictions and conscious performance of official duty (at the level of a state understanding of his role), and the end result of military reform also depends on that. Therefore I hope that the Person will not be forgotten in covering problems in ARMEYSKIY SBORNIK connected with mastery of new combat equipment, foremost training methodologies and other questions that are important in elevating combat readiness, for it is not exhortations and lectures, but the substantive experience of troop officers that is persuasive.

The journal has to be a unique bridge between theory and practice and has to combine efforts in searching for that which is new and most promising and which promotes effective development of military affairs. Topical, analytical articles deep in content that force one to think will be interesting to all categories of servicemen, especially now, in the stage of Russian Armed Forces reform, when views on many important questions have changed.

I hope many of our problems will be reflected in the new publication and that the journal will facilitate their solution to a certain extent. And with regard to the Main Commissariat of the Ground Troops assisting its creative collective, I assure you that the editorial staff and journalists have the right to count on it.

I congratulate the chief editor and editorial collective on publication of the first issue of the Russian Federation Ministry of Defense journal ARMEYSKIY SBORNIK and wish creative successes.

Colonel-General of Aviation Petr Stepanovich Deynekin, Commander-in-Chief, Russian Federation Air Force

Biographical note

Born 14 December 1937 in city of Morozovsk, Rostov Oblast. Completed Balashev Military Aviation School for

Pilots in 1957. Served as aircraft copilot/assistant commander and commander in Long-Range Aviation. After completing Air Academy imeni Yu. A. Gagarin in 1969, appointed deputy commander, then commander of a squadron in a guards bomber regiment. Served as deputy commander and commander of an air regiment and commander of an air division of Long-Range Aviation. Completed USSR Armed Forces General Staff Military Academy in 1982. Served as deputy commander of air army for combat training, air army commander, commander of Long-Range Aviation, and first deputy Commander-in-Chief of the Air Force. Appointed Commander-in-Chief of Air Force in 1991. During flight duty mastered several types of combat aircraft, including the Tu-160 strategic missile-armed aircraft. Overall flying hours are more than 4,500. Honored Military Pilot. Married, has three children.

ARMEYSKIY SBORNIK is taking the first step toward its readers. I am sure that among them will be many recent friends and admirers of the very old professional publication of military aviators, the journal AVIATSIYA I KOSMONAVTIKA, whose publication unfortunately has been discontinued. From my heart I wish the employees of the new military printed organ high expertise, boldness and impartiality in covering urgent problems in the life and activity of the Russian Armed Forces, including military aviation.

The history of development of Russian combat aviation numbers over 80 years. Countries and continents many times have been witness to the triumph of our aircraft designers, aircraft builders and famed pilots. Russian pilots were applauded in Vancouver and Seattle, at Farnborough and Le Bourget, and in Malaysia and Chile at the most prestigious exhibitions of world aircraft. The "Russian Knights," "Swifts" and "Sky Hussars" Russian aerobatics teams are known far beyond the country. I believe that those who observed their subjugating performances gained confidence that Russia was, is and will be a great air power.

Today life forces us to accomplish simultaneously the difficult tasks of organizational development, reform, reduction in force and reception of air formations and units being withdrawn from countries of the near abroad. Despite difficulties with financing and the acute shortage of aviation fuel, spare parts, housing and office spaces, hundreds of air collectives—pilots and navigators, tactical control officers, ground aviation specialists, Russian Army scientists and employees—are working selflessly.

Aviators have the right to count on moral support of ARMEYSKIY SBORNIK journalists in this creative work. Comprehensive, honest journalistic research and generalization of combat training experience will have an unquestionable positive influence on military aviators.

We always are ready for a frank discussion with journalists and for a concerned discussion of all our problems in pages of the military press. We invite the ARMEYSKIY SBORNIK collective to air units and formations for meetings with pilots, engineers and technicians—in short, with those whose work supports the homeland's winged might.

I believe that patriotic concern for the prestige of military labor and for the professional growth and moral health of

aviation specialists must become a matter of honor for the new publication's journalists. Air warriors have been the pride of the nation at all times. Today as never before, it is important to say a good word about the remarkable people of our aviation. These people's specific deeds reinforce my firm conviction that the Air Force will become one of the most powerful and mobile means of warfare and that our Russia will become winged.

The birth of the new journal coincides significantly with the approaching semicentennial of our people's Victory in the Great Patriotic War. ARMEYSKIY SBORNIK can continue the traditions of propaganda of the country's heroic history and best traditions of its armed defenders, including aviators. The heroics of flying work and exploits of frontlinesmen and peacetime pilots are a noble, interesting topic for military readers of all generations.

I wish the new professional military publication high flying and great popularity.

Colonel-General Yevgeniy Nikolayevich Podkolzin, commander, Russian Federation Armed Forces Airborne Troops

Biographical note

Born 18 April 1936 in village of Lepsinsk, Andreyevskiy Rayon, Taldy-Kurgan Oblast. Completed Airborne School in 1958. Served in the troops from commander [sic] to battalion commander in the Transcaucasus. Completed Frunze Military Academy in 1973 and was appointed regimental commander. Became commander of an airborne division in 1976. After completing Armed Forces General Staff Military Academy in 1982, became First Deputy Chief of Staff of Airborne Troops. Chief of Staff of Airborne Troops from 1986 and Commander of Airborne Troops from 1991. Appointed Commander of Mobile Forces (Airborne Troops) in May 1994.

To the ARMEYSKIY SBORNIK collective

The honor of preparing the first issue of ARMEYSKIY SBORNIK has fallen on you. With your journal you open a new page in the history of the military press. Bon voyage! Officers of the Airborne Troops not only always have been readers of Army journals, but also have collaborated actively with editorial staffs in developing scientific methods articles and exchanging experience. You may be sure that such collaboration with ARMEYSKIY SBORNIK not only will be continued, but also will see further development.

The establishment of such a "general army" journal appears to us to be symbolic. First of all, articles being published will have a systems nature and, secondly, the journal is called upon to work essentially under conditions of Russia's reconstitution of its Armed Forces. We wish the journal success in resolving age-old contradictions between scientific nature and accessibility, between theory and practice, between an informational and analytical nature, and between new and old.

We note with gratitude that there will be an "airborne man" on the journal editorial staff. Topics of the nature, missions, role and place of the Airborne Troops and of their life and combat experience always have been interesting.

We promise that the editor who prepares articles on problems of the Airborne Troops will have something to say to the Army about the present and future of our Troops. Within the scope of Russian military organizational development, the Airborne Troops' combat and methods experience and military-technical capabilities are being transformed into theory and practice of the Mobile Forces which are being established. Everything is new here, and it is this newness—thought, experience and technical prospects—that we would like to see in the journal's pages. And we always would like to see people. Further, avoid the affliction many have of beginning from scratch. You have experience, traditions, cadres, purposefulness and a desire to help our Army with your assets. In this the Airborne Troops are your friends, comrades in arms and assistants. I wish you success!

Colonel-General of Aviation Viktor Alekseyevich Prudnikov, Commander-in-Chief, Russian Federation Armed Forces Air Defense Troops

Biographical note

Born in 1939 in Rostov-na-Donu to a worker's large family. Entered an Air Force specialized school at age 14. Later completed Armavir Military Aviation School for Pilots, Air Academy imeni Yu. A. Gagarin and USSR Armed Forces General Staff Military Academy. Flew many types of aircraft and commanded an air regiment, formation and large strategic formation of air defense and the Moscow Air Defense District. Was promoted to Lieutenant-Colonel and Colonel ahead of schedule. Decorated with orders of Red Banner, Red Star and "For Service to the Motherland in the USSR Armed Forces," 3rd Class. Commander-in-Chief of Air Defense Troops from August 1991.

The world still lives according to laws in which military force plays an important role. A large number of states continue to build up military might even with a numerical reduction in their armed forces. More effective weapon systems are being developed and troop groupings are being improved qualitatively. The reduction in armed forces of foreign states is occurring basically through a reduction in the number of ground troops, while combat capabilities of aerospace attack forces are being built up constantly. As a result, the potential of these forces may grow by almost one and a half times by the year 2000.

Forms and methods of conducting military operations are being improved. Previous views on warfare as being the combat operations of groupings of ground troops in which air attack forces and air defense troops perform secondary missions are obsolete. The course and outcome of modern military operations depend substantially on results of opposition in aerospace, which is a very important sphere of warfare. Therefore transformations being carried out in the Russian Federation Armed Forces in support of the state's security in the aerospace sphere are aimed at creating a unified national aerospace defense system. The Air Defense Troops are the foundation of this system. One should think that the process of formation of Russian aerospace defense will be reflected worthily in the pages of ARMEYSKIY SBORNIK.

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It is obvious that combat capabilities and makeup of the Air Defense Troops must correspond to the level of development of aerospace attack forces and assets and must support continuous reconnaissance of aerospace by permanent readiness forces. They must promptly warn the Supreme Commander, command elements of branches of Armed Forces and of military districts, and Civil Defense entities about the beginning of an enemy nuclear missile attack and about an enemy air attack and also provide security in air space for Russia's State Border.

Elimination of the former USSR's unified air defense system in combination with a reduction in numerical strength of Air Defense Troops and with resource limitations led to the appearance of a number of serious problems in creating an aerospace defense system that conforms to modern requirements and will include reconnaissance, aerospace attack warning, missile-space defense, air defense, and unified command and control.

Forced resource limitations lead to a reduction in effective combat strength of peacetime Air Defense Troops, but what is necessary here is the preservation and priority development of key elements of the air defense system—the reconnaissance system and command and control—on which timely, full-scale deployment of all air defense depends with the appearance of a threat of war.

It is proposed to develop groupings of the Air Defense Troops as a branch of the Armed Forces by a comprehensive upgrading of combat arms, special troops and rear services in order to achieve rationality of structures and maximum effectiveness of their employment and to increase combat capabilities and mobility for ensuring the possibility of concentrating efforts on the most important axes. I assume that these and other problems will be covered in pages of ARMEYSKIY SBORNIK.

Creation of a qualitatively new branch of the Russian Armed Forces conforming in makeup, status and combat capabilities to the development level of aerospace attack forces and assets and to the real degree of military danger is the principal goal of Air Defense Troops organizational development.

Colonel-General Vladimir Timofeyevich Churanov, chief of Russian Federation Armed Forces Rear Services

Biographical note

Born in the city of Nevinnomyssk, Stavropol Kray in 1945. Completed Volsk Military Rear Services School in 1966, Military Academy of Rear Services and Transportation in 1979 and USSR Armed Forces General Staff Military Academy in 1987. Successively held a number of rear services command positions in the troops. Was unit chief of service, deputy division commander for rear services, and headed up rear services of an army of Moscow Military District. Married, has two children. ?? I am convinced there will be many rear services specialists in the ARMEYSKIY SBORNIK reading audience. What would I like to say in this regard? Today, when we live and serve under conditions of a fundamental transformation of the country's economic structure and actually take part in Armed Forces reform, a number of questions arise requiring in-depth study and analysis in the pages of the press. In my view,

problems of military-economic support of Russia's defense capability, an improvement in the mechanism of logistic support based on market relations, and creation of an appropriate infrastructure for these purposes acquire special urgency. It would appear that ARMEYSKIY SBORNIK could become the professional rostrum for a discussion of these and other questions.

It seems to me the journal will act correctly and farsightedly if it will devote attention above all to the preparation and training of logistics specialists at the tactical and operational level capable of accomplishing the difficult tasks of supporting the Armed Forces under the new conditions. For this it evidently makes sense to think about organizing general compulsory economic education in the pages of ARMEYSKIY SBORNIK. By the way, it will be useful not just for rear services personnel, but also for commanders as organizers of unit administrative and support services. By publishing theoretical and applied articles within the scope of general compulsory education, the journal will help officers adapt more quickly under the new conditions based on a knowledge of documents of an economic and legal nature.

Specific experience of the work of rear services specialists under market conditions also must become the readers' property. Do not be shy in turning also to civilian structures for advice. For example, a number of the country's economic higher educational institutions have accumulated interesting experience in training manager specialists, which also is applicable in rear services military educational institutions. Much also can be learned from the new wave of businessmen. It would appear to make sense to give them an opportunity to appear in the journal's pages.

No matter how oppressive day-to-day routine business may be, intensive combat training is going on in rear services troops and establishments. In connection with the change in Russia's geostrategic position and adoption of a new military doctrine, the nature and direction of training are undergoing modification. I am sure the rear services reader will not pass over ARMEYSKIY SBORNIK articles and methodological instructions on organization of classes with different categories of rear services specialists and organization of special tactical and experimental-research exercises, and on actions of rear services subunits and services under combat conditions, particularly in defensive battle.

I know from my own experience that the dry line of an instruction which has arrived in the troops on time is at times more valuable to rear services personnel than the most fiery social and political journalism. I hope that with all the scarcity of the journal's space, ARMEYSKIY SBORNIK still will find an opportunity to communicate to readers the most pertinent and important guidance documents on logistic support to troops, which will help commanders and their deputies for rear services and the chiefs of supporting services to adjust their work of organizing unit administrative and support services in a timely manner.

I believe there also will be no objection to my firm conviction that questions of servicemen's social protection

and of timely, complete communication to them of authorized standards of allowances must become one of the key directions of ARMEYSKIY SBORNIK. These problems now have become especially acute in connection with the difficult economic situation in the country and with the withdrawal of troops from the near and far abroad. We are seeking and finding ways out of the situation at hand. The Armed Forces Rear Services leadership is undertaking vigorous efforts to introduce a territorial logistic support system to the troops, which in my view conforms most fully to economic conditions taking shape in Russia and to the situation in which the Army now finds itself.

To increase the effectiveness of the territorial logistic support system, we intend to set up 2-3 autonomous territorial logistic support area centers in military districts. Their formation will permit not only improving the quality of troop supply, but also thoroughly relieving the load on district rear services entities and giving them an opportunity to pay more attention to combat and mobilization training. Moscow Military District is introducing the new structures first. I hope the journal will tell periodically how the experiment is going and will suggest to readers recommendations developed in its course.

Rear services have been and remain the connecting link between the country's economy and the Armed Forces. This is why I would like the topical problem field of ARMEYSKIY SBORNIK to encompass both military as well as civilian spheres. Journalists will give us inestimable help if they will raise questions in a qualified manner which arise at the interface of interests of different departments and tell about the practice of rear services entities interworking with corresponding structures of industry, transportation and agriculture.

I am sincerely convinced that journal articles on questions of military-economic support to the Armed Forces and of combat and mobilization readiness of rear services will help our officers as well as specialists of civilian structures connected with rear services to enter into market relations with fewer losses and that the articles will become their constant companions in service and work. I wish you creative successes, friends!

Does Russia Need an Army?

94UM0565A Moscow ARMEYSKIY SBORNIK
in Russian No 1, Jul 94 (signed to press
30 Jun 94) pp 14-18

[Article by Colonel V. Cheban, doctor of philosophical sciences, under rubric "Military-Political Review"]

[Text] It has been noted correctly that if mathematical axioms were to infringe on anyone's interests, they would be fervently disproved. The problem of the need for the Army's existence and its usefulness to society is among those which affect (and very substantially) the interests of all citizens. Therefore arguments about the role and place of the Armed Forces in society's life are not subsiding.

Meanwhile, it has long been known that the need for any state institution, including the Army, is determined in the final account not by the subjective desire of individual

persons or the striving of social movements, but by the real need for its function, dictated by conditions of the state's existence and development.

The social benefit of a military institution that is science-intensive and costly to each state is the assurance of favorable foreign-policy conditions for the life and activity of the country's population in a situation where the likelihood of armed aggression cannot be placed in the category of abstract concepts. And trained, skilled "fire fighters" supported by everything necessary are needed in order that the fire of war not threaten the common house called the homeland...

Unfortunately, people have disputed this truth in the past and refute it now without pondering the kind of consequences for the state to which this may lead. In 1900, in the work "Tri razgovora" [Three Conversations], famous Russian philosopher V. Solovyev put into the mouth of one of the main characters the following argument characterizing the attitude of society of that period toward Army service: "From time immemorial to this day, any military person—enlisted man or field marshal, it is all the same—has known and sensed that he serves an important cause... a good, noble, honorable cause in the lofty sense, which the very best, first-rate people, leaders of peoples, heroes, always have served. This our cause always has been sanctified and glorified in churches and made famous by universal talk.

"Then one fine morning we suddenly learn that we have to forget all this and that we must understand ourselves and our place on God's Earth in the opposite sense. The cause which we served and of which we were proud has been declared bad and pernicious; it turns out that it is contrary to God's commandments and human feelings, it is a most horrible evil and calamity."

Five years later Russia suffered a crushing defeat in the Russo-Japanese War. The military turned out to be "extreme" and the attitude toward the Army did not improve. To the contrary, the squall of criticism and obvious insults stepped up. That situation could not help but disturb the informed minds of Russia. Thus, in 1907 A. Volgin cautioned the writing community: "Let those who take up the pen with the goal of being useful to the Army write about it solicitously; much knowledge is needed to say a useful word about it; indiscriminate censure of the leadership or groundless praise is only an easy method of winning vulgar success for oneself, but it is not a useful undertaking. And I will say to those who speak about the Army in order to spread hatred toward it, in order to incite to treason: Refrain from this undertaking, if not out of love for the Motherland, then at least out of an instinct of self-preservation: without discipline and the oath the Army is not an army, but a wild beast which will destroy everything, and you as well."

Another seven years went by and Russia entered World War I, where it was by no means victories that awaited it. And in 1918 the Army exchanged the trenches of a war against foreigners for trenches of the Civil War ..

A wave of criticism fell upon the Armed Forces with special force in the years of perestroika. A hurricane of denunciations and accusations unceremoniously crushed

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the positive assessment needed for treating the serious Army maladies. It is unknown how this powerful assault would have ended, but stormy events abroad and inside the country made substantial corrections.

Events in the Persian Gulf dealt the first crushing blow to the abstract pacifist who believed that it is enough to admit the hopelessness of wars and anathematize them and... peace will reign forever. As we know, the problem there in the final account was being resolved and was resolved not according to recipes of new political thinking, but by the old, "antiquated" method of use of military force. Everything was organized according to the latest word of military science and practice, and colossal amounts were spent.

Some time later the flame of armed conflicts flared up in the once unified and mighty power now called the CIS. It is paradoxical, but a fact, that the military's brass trumpet solo still stands out noticeably in the peacemaking band and camouflage clothing overshadows diplomatic tailcoats on television screens. And while arguments about quantitative parameters of the Army, methods of its manpower acquisition and ways of conducting military reform have not yet died away in Russian society, the question of the advisability of its existence essentially has been nullified.

Inasmuch as the principle of crossing oneself after it thunders is especially damaging in the matter of ensuring a state's military security, we should dwell in detail on arguments in favor of establishing and developing the Armed Forces without awaiting a new pseudocritical anti-Army cyclone.

Events of international and domestic life of recent years show that sources of wars and armed conflicts have not disappeared. Unfortunately, the old formula of war "ripening" from peace still operates and reduces to the following. Every state has needs of an economic, political, scientific-technical, humanitarian-cultural and ethnic nature. Interpreted and under the constant attention of authorities and society, they form state interests, for the realization of which the state formulates goals and determines methods of achieving them. A certain place in the arsenal of methods existing today is held by the military-force method, where armed forces act as the chief instrument.

It is all rather simple if we do not take one circumstance into account. A state's interests frequently end up outside the limits of its own borders, and the latter also may be an object of dispute. This is eloquently attested to, for example, by territorial claims of states on each other and by the history of wars fought for this reason. By the way, today there exists a rather long list of neighbors' territorial claims on Russia as well.

The lack of coincidence of interests or their intersection on "another's field" forms an entire system of contradictions among states, which as they develop may become exacerbated and enter into the stage of resolution. Methods of attaining state goals begin to play the chief role in this stage. To interpret the "genetic code" of war or an armed conflict means to determine when and why the military-force method was given priority importance in the resolution of controversial problems.

The application of this method depends on a number of circumstances, first of all on the extent to which nonmilitary mechanisms of settling conflicts have been developed and are popular in the state and how fully the authorities have exhausted the capabilities of diplomacy and social and cultural ties before appealing to weapons.

Secondly, the size and status of military potentials of parties in conflict play a role of no small importance. As soon as an imbalance is discovered, a real danger arises of one side's use of its advantage over the other. In this sense both falling behind in the arms race or in the process of upgrading the Army and Navy as well as getting considerably ahead in the disarmament process and in the reduction of armed forces are identically dangerous for the state. For a real strengthening of peace it is important not simply to have a reduction of armed forces and arms, a curtailment of military production and withdrawal of troops from foreign territories, but a balanced withdrawal on a global and regional scale from the "trenches of confrontation" to the "disposition of peace."

In this connection the situation at hand has turned out to be not in Russia's favor. The former USSR's example in reducing Armed Forces and arms in Europe as well as the withdrawal of troops from foreign territories did not become "contagious" for other countries. The USSR's disintegration in turn engendered a new contradiction between the obligation for reduction and Russia's military security, especially on its flanks.

Thirdly, the military method is set in motion with appropriate external and internal conditions of state life. High international authority or the world community's sympathy to the state on the one hand, and social stability, the country's economic dynamism, and the high morale of citizens on the other hand serve as a factor deterring outside military aggression.

Conversely, the enumerated parameters combined with the particle "not" stimulate aggression on the part of the rival. This circumstance also is pertinent for Russia inasmuch as, in the words of Russian Federation President B. Yeltsin, "there are forces abroad who would like to keep Russia in a condition of controlled paralysis."

The history of the Russian state attests that the overwhelming number of wars against Russia fell in the period of its establishment and of an unstable international situation, and in the "times of troubles." According to calculations of Russian historian V. Klyuchevskiy, the Great Russian people endured 160 external wars in 234 years (1228-1462) in the period of their formation. In the 16th century Muscovy was at war in the northwest and west against the Pospolite Rech, the Livonian Order, and Sweden for 43 years without interrupting the fight against Tatar hordes on the southern, southeastern and eastern borders. Russia waged war for 48 years in the 17th century and for 56 years in the 18th century. The Napoleonic invasion and the Crimean War were like a bloody scar on the 19th century. In the 20th century Russia together with other republics of the USSR became the only obstacle against which the wave of Hitler's enslavement of peoples broke.

The Army is the principal instrument for solving controversial problems by the method of force. In countries considered the standard of a democratic system and a civilized nature, state concern for armed forces is displayed not in words, but in action. At a conference of top Bundeswehr command personnel in the fall of 1993, the FRG president noted that "the threat to Germany's security has diminished considerably after the beginning of major transformations in Europe," but in the opinion of the head of state, this by no means signifies that there is no need to further strengthen the Bundeswehr "as a factor guaranteeing stability in the country."

France has adopted 96 programs for rearming the Army. In the opinion of the French minister of defense, the country's draft budget, providing for the allocation of 103 billion francs for military expenditures, is aimed at putting an end to the "weakening of the Army" which had begun to show in recent years.

The U.S. attitude toward its own armed forces needs no publicity. Military service here is respected both by the government and the people. The Army receives everything necessary for performing assigned missions "for the sake of America's prosperity."

The fact that the majority of countries working to create atomic and other kinds of weapons of mass destruction are in relative proximity to Russia also cannot be discounted.

Military blocs also act as an impressive instrument of force. For example, NATO, the traditional opponent of the disintegrated Warsaw Pact, not only has no thought of self-dissolution, but even has difficulty withstanding the onslaught of those wishing to come under its roof.

The need for armed forces also is dictated by the fact that military-political relations taking shape on a global and regional level and in the near abroad did not eliminate the nutrient medium of mistrust, suspicion and the aim of using force for political goals. The inertia of the "cold war" is acting, manifested in open and concealed rivalry and in the desire to gain the upper hand and dictate one's will on other peoples. This is indicated in particular by the jealously nervous U.S. reaction to certain successes of Russia in the matter of settling the Bosnian crisis.

The break in the planet's old geopolitical outline has by no means reduced the area of the conflict-forming medium. Evidence of this is the reduction of military-political space within which Russia can maneuver, and also the swift distancing of former Warsaw Pact allies and Union brothers away from Moscow. Despite the unresolved nature and neglect of economic, sociopolitical and cultural problems, the new sovereign states rushed to set up their own armed forces. It was no secret to anyone that this undertaking demands enormous financial expenditures.

The appearance of one's own army inevitably engenders a temptation to put it to use. The situation was exacerbated by the fact that in a difficult situation, not possessing the full set of nonmilitary means of resolving controversial problems, politicians instinctively reached out for the power structures. The practice of active use of armed

forces in the conflict between Azerbaijan and Armenia and between Georgia and Abkhazia is indicative in this respect.

Insufficient preparation of the state border also is a factor negatively affecting Russia's security. And it is not only a matter of using territorial claims as an occasion to impose one's interests on Russia by taking advantage of its difficult domestic situation, but also the fact that this is a favorable circumstance for penetration onto Russian territory of all the most negative things, from drugs to armed groupings of terrorists.

One other important fact cannot fail to be taken into account. Despite a rejection of the "image of the enemy," the military-political practice of many states by no means is of a friendly nature with respect to Russia. Exercises of the United States and Japan where the names of the Kuriles, Sakhalin and Primorye, i.e., places belonging to Russia, figure in the working lexicon of staffs are held regularly in the Far East. Although the principle of a defense along all azimuths is contained in military doctrines of former Warsaw Pact allies, nevertheless the emphasis has shifted to reinforcing eastern borders. It was in the eastern part of Poland that Polish Army exercises Klen-93 and Orion-93 were held last year.

While exercises, reconnaissance flights and other probings of our state's defense indicate possible military danger, armed conflicts represent an immediate threat, especially when they occur near Russian borders. The scenario for their appearance and development is diverse and, as life has shown, one should not count on their self-extinction. Peacemaking is necessary as a special kind of international social practice and political activity in order to stop a bloody Moloch.

Russia is a permanent member of the Security Council and under the UN Charter is responsible for maintaining international peace and security. An important place is set aside for the military in this matter. As of today five teams of Russian military observers take part in peacekeeping operations along UN lines. A Russian separate battalion numbering 914 persons has been in Bosnia as part of UN peacemaking forces since April 1992 and was increased to 1,200 persons in January 1994. The Russian military contingent in Tajikistan, the Dniestr Republic and South Ossetia has been activated as part of CIS collective peacemaking forces.

All this work requires no small expenditures. Over R2.5 billion (in 1992 prices) were expended from the Russian Ministry of Defense budget in 1992 and over R26 billion in 1993 for financing peacekeeping operations on former Union territory. But the highest price was paid by more than 100 Russian servicemen, who died for the sake of saving others and stopping a bloody slaughter.

The problem of preserving Russia's sovereignty and historical acquisitions, for which no small sacrifices have been made, is extremely pressing as of today. It should not be forgotten that Russia was recognized as a great power after the conclusion of a lengthy, bloody battle for the shores of the Baltic and Black seas.

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Features of the geostrategic position objectively put Russia either in the place of a military-political buffer capable of halting a powerful, aggressive wave (as was the case in the repulse of the Tatar-Mongol invasion), or of an ally with equal rights in one of the blocs, or of an "auxiliary worker" for a strong "proprietor," partaking of all the delights of "military-political dedovshchina [literally, hazing of new conscripts by old-timers]." This is why modern military organizational development is called upon to ensure a substantial correction aimed at having a renewed Russia acquire its face and its place in world politics. And Armed Forces capable of rebuffing any aggressor and defending the homeland's independence act as its principal element.

There Will Be Military Reform!

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[Item by Lieutenant Colonel O. Slobodin, graduate and gold medalist of Academy of Armored Troops imeni Malinovskiy]

[Text] A reception was held in the Kremlin Palace of Congresses for graduates of military academies on 28 June. It was attended by leaders of the country, of the Ministry of Defense and of the Russian Orthodox Church. Speaking to graduates, Russian Federation Minister of Defense General of the Army Pavel Grachev said: "Those invited to the Kremlin represent the elite of our officer corps. The officer in Russia always has been more than simply a person in military uniform. Above all he is the bearer of the idea of selfless, state service to the Motherland."

"The Army," remarked the minister of defense, "is an eternal sentry who never leaves the post under any circumstances. High combat readiness, vigilance and improvement are its duty and obligation. Security, greatness and glory of the homeland are its purpose. This is our choice, our life, and your destiny and mine, dear officers!"

The Russian Armed Forces meet modern demands—that is the assessment of the Supreme Commander, Russian Federation President Boris Yeltsin. In his speech the Supreme Commander noted that the Army and Navy gradually will be reduced to 1.5 million persons and will be converted to a contract basis to an even greater extent. The president of Russia spoke out categorically against squandering the unique scientific-technical potential which has accumulated in the Armed Forces.

This year 19 academies and 5 institutes prepared over 8,000 officers with a higher military and specialized military education for units, formations, large strategic formations and establishments of the Army and Navy. Gold medals were received by 233 persons and an honors degree by 1,331.

At the end of the reception Russian Federation President Yeltsin wished all those present good health and success in the difficult military service. Prospects opening up for graduates are fraught with high responsibility. Performing the missions assigned to the Army and Navy will require each person to further improve not only specialized, but also legal, economic and psychological-pedagogic training.

Russia needs a professional Army capable of performing any assigned missions, and today's graduates are to perform these missions, accomplish the transformations envisaged by military doctrine, and continue building a new Army and Navy meeting requirements of today's military-political situation in the world, trends in its development, and the degree of real military danger to Russia.

News

94UM0565C Moscow ARMEYSKIY SBORNIK
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[Unattributed items]

[Text]

From Headquarters, Russian Federation Armed Forces Air Defense Troops

There have been more frequent instances lately where foreign aircraft ignore the established procedure for crossing the state border and using air space, go deep into Russian territory and refuse to carry out demands of air traffic control entities.

As reported by Colonel L. Shirobokov, press service chief of the Directorate of the Commander in Chief, Air Defense Troops, since 1 January of this year the Air Defense Troops have noted 109 violations, including 22 by aircraft of states of the near abroad and 27 by aircraft of foreign airlines

Forty five intruder aircraft (of which 23 were foreign) were landed at intermediate airfields or returned to departure airfields through steps taken by the Air Defense Troops and by Unified Air Traffic Control System entities.

Extremely disturbed by the situation at hand, on 10 July of this year the Air Defense Troops command requested all ministries and departments and the heads of Russian commercial and foreign airlines to comply strictly with requirements of documents regulating the procedure for using Russian Federation air space, and through mutual and coordinated actions to preclude the appearance of emergency situations which might result in human victims.

Under the direction of Lieutenant General of Aviation Yevgeniy Makoklyuyev, first deputy chief of Air Defense Troops Main Staff, a task force has been set up which includes forces and assets for neutralizing air terrorists. Depending on the situation, the task force includes A-50 airborne early warning aircraft and duty forces located in the zone of the criminals' presumed flight. In addition, if the situation requires it, radar subunits are included and mobile, low-altitude assets are moved into position areas. This is done in extremely compressed time periods.

As was the case recently in the North Caucasus region, essentially only air defense assets are capable of registering all actions of criminals in the air, precisely indicating their landing sites, and issuing all necessary information to Ministry of Internal Affairs entities.

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From Headquarters, Russian Federation Air Force

An air holiday devoted to Youth Day was held at Tushino airfield at the end of June. It was initiated by the government of Moscow. The expertise of military pilots, who performed single-aircraft and formation maneuvers in the Moscow sky in SU-27 and MIG-29 fighters and SU-25 attack aircraft, produced a lasting impression on holiday guests and participants.

A long-standing friendship links aviators of Russia and France. Its traditions were laid down back in the Great Patriotic War, when pilots of a French squadron and then also of the "Normandy-Neman" Regiment fought bravely as part of our Air Force. A friendly visit by a French air delegation in June of this year was dedicated to the 50th anniversary of those memorable events. French veterans of the "Normandy-Neman" Regiment visited Lipetsk, where an air holiday was held at the military airfield in honor of Soviet-French friendship-in-arms. French military pilots, who flew into Russia in Mirage 2000 and Mirage F-1 aircraft, took part in demonstration flights together with pilots from Kubinka skilled in advanced maneuvers.

From Lipetsk the French delegation set off for Irkutsk, and from there to a military airfield in Maritime Kray, where the formation in which the renowned "Normandy-Neman" Regiment fought 50 years ago is stationed today.

On 18 June aviators of the Orsha Red Banner, Order of Suvorov 3rd Class Ground Attack Regiment, now part of peacemaking forces in Tajikistan, celebrated the 80th anniversary of the day the native unit was formed. Regimental veterans were invited to celebrate the jubilee. In these same days a group of journalists of a number of Russian publications visited the unit and were given an opportunity by the Air Force command to become familiar with the history and present day of one of the oldest units. The regiment takes its genealogy from the 3rd Corps Fighter Detachment, in which Yevgraf Kruten, one of our first aces, served in World War I. Eight of the regiment's pilots became Heroes of the Soviet Union in the Great Patriotic War. Today the aviators worthily continue the traditions. As part of peacemaking forces in Tajikistan, they are supporting Russian border guard personnel by preventing the penetration of intruders from the adjoining side.

A contest of conceptual designs of trainer aircraft for outfitting the Russian Air Force, which lasted around two years, concluded recently.

A total of three basic versions were considered: the single-engine S-54 of the Sukhoy OKB [Special Design Bureau] ANIK [not further expanded, possibly aircraft scientific-research company] and the twin-engine YaK-130 of the YaK AK [not further expanded, possibly aircraft company] and twin-engine MIG-AT of the MIG ANIK. The Air Force military-technical commission gave preference to the YaK-130.

Certain foreign firms took an interest in the latter two designs and are ready to invest money in their realization.

From Headquarters, Russian Federation Armed Forces Rear Services

In accordance with Russian Federation Minister of Defense Directive No D-30 of 16 May 1994, a decision was made to set up an extrabudgetary social support fund for Russian Armed Forces personnel in the Russian Federation Minister of Defense Main Directorate of Military Budget and Financing from financial resources coming from activity of the Military Insurance Company. By decision of the Minister of Defense, resources of this fund will be sent to the centralized extrabudgetary fund for special support of Ministry of Defense personnel and to extrabudgetary funds for social support of personnel of branches of the Russian Federation Armed Forces, districts and groups of forces.

It is planned to spend the funds to conduct military-patriotic and cultural activities on state holidays, organize meetings with war participants and Armed Forces veterans, pay for treatment of servicemen and their families, provide free financial assistance to servicemen with large families and those in special need, and also to subsidize public dining enterprises in various officers' clubs when rest and relaxation nights, meetings and other activities involving Russian Federation Armed Forces personnel, war participants and Army and Navy veterans are held there.

Commanders in chief of branches of the Armed Forces and commanders of districts and groups of forces are instructed to ensure the sensible and very specific use of these resources.

From the Directorate of the Chief of Communications

A new automated digital complex of variously based ground satellite communications stations became operational in early 1994. It is intended for communications with instant selection of preset channels among various subscribers via satellites such as Molniya in geostationary and elliptical orbits in support of the Armed Forces. The satellite communications stations support transmission of digital and analogue data (telephone, telegraph, facsimile communications, data transmission, and the transmission of various signals and commands).

These facilities are outfitted with modern gear made on a fourth-generation domestic element base. The stations permit stably supporting communications in the presence of active, deliberate jamming. Operating modes are changed and communications among subscribers is established automatically using a controlling computer and special computers (controllers).

A distinguishing feature of the stations is that signals are formed and processed with the help of special processors operating in real time. This permits a sharp reduction in the number of mechanical switchings and the processing of channels or groups of channels with different data transmission rates.

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As we know, a peacemaking contingent from the Russian Federation Armed Forces is on Republic of Tajikistan territory. Its makeup also includes subunits of communications personnel assigned from the Moscow, Leningrad, Volga and Ural military districts and led by Colonel V. Sadovikov.

Russian communications personnel set up an effective mobile communications system based on satellites and radio channels. They also set up reserve radio nets. In addition, they arranged good interworking with their colleagues—border guard personnel and personnel from the Republic Ministry of Defense.

It is no secret that it is not a simple situation on Tajik soil. The communications personnel had to work hard to dig reliable shelters and camouflage equipment rooms and stations. Therefore fire delivered by opposition fighting men did no damage to their positions. Most important, the personnel did not suffer.

At the present time majors Yu. Bogarin, A. Dudarev, A. Pchelintsev and A. Udaltsov, Captain I. Lovtsov and their subordinates are coping excellently with assigned missions.

Russian military communications personnel are successfully resolving not only problems of providing stable, uninterrupted command and control in support of peacemaking forces; they often help specialists of Republic of Tajikistan Ministry of Defense units and subunits in repairing communications equipment and in mastering equipment under mountain conditions. Thus, when an R-140 radio of the Tajik communications personnel malfunctioned, Captain V. Romenskiy and Warrant Officer I. Bugayenko took part in restoring it. Sergeants A. Gerasimov and A. Dvoretzkiy held classes with Tajik radio operators.

Recycling Missile Weapons: Economically Profitable and Ecologically Clean

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[Article by Colonel V. Gorbachev, doctor of technical sciences, senior scientific associate, and Colonel (Reserve) A. Kolotilov, doctor of technical sciences, professor, under rubric "My Opinion on the Subject"]

[Text] In performing the task of eliminating arms under the START II Treaty, it is impossible not to take economic support to this process into account as well. With a proper approach, the Army's enormous material resources subject to elimination can be directed toward improving existing equipment models, developing new ones and improving socioeconomic conditions of servicemen's life. In addition, the process of eliminating the nuclear missile potential has to be ecologically clean and safe for nature and the population.

An opportunity to organize the destruction of solid-propellant missiles by the most advisable method can be fully found in that enormous potential of military-technical science, technology and weapons maintenance practice that has accumulated in the Armed Forces over

many decades. At the present time this process is carried out exceptionally primitively, albeit by very costly methods. The existing experience of destroying shorter and intermediate range missiles is sad. A certain positive effect was achieved only in eliminating missiles by the launch method. But using them for commercial purposes to insert various payloads into orbit or for atmospheric sounding can bring a certain profit.

There are three methods for recycling missiles with solid-propellant engines. The first and simplest, which is being used at the present time, is the destruction of solid-propellant missiles by incineration or demolition, but it produces no economic advantage and its ecologic consequences simply are depressing. The fact is that components of liquid and solid missile propellants are highly toxic. They contain substances which affect the human nervous system, mucous membranes and lungs and also contain blood poisons and systemic toxins. And each missile contains tens of tonnes of them. In addition, with the detonation of a missile and its container, approximately the very same quantity of finely dispersed fiberglass and of aluminum and carbon oxides forms. Their harmful effect on nature and man has not been completely studied. Finally, one should take into account the rather impressive costs for restoring fertile soil due to the consequences of the ejection of earth during an explosion and the appearance of hundreds of tonnes of pulverized soil in the atmosphere. So the ecologic damage which Russia will pay for destroying two-thirds of its powerful nuclear missile potential by that method is obvious.

The second way is ecologically less dangerous. It consists of the fact that solid-propellant missiles can be sunk in internal bodies of water or those bordering on Russian territory. Damage to the aqueous and air media will not be as significant. This is connected with the fact that fiberglass bodies of containers and missiles are neutral toward water, do not dissolve and do not release harmful substances into it. Solid missile propellant also is difficultly soluble in it. The small amount of oxygen which may enter the aqueous medium from its oxidizer hardly will be destructive, since the rate of this process is not great inasmuch as oxidizer crystals are encapsulated in the fuel binder of the propellant. We will note that as a result of contact of solid propellant with water, after a brief time its sensitivity toward external mechanical, thermal and impact effects is reduced sharply and it becomes less dangerously explosive or entirely nonexplosive. Thus, this method can be considered ecologically acceptable, but it too brings no economic advantages.

Finally, the third method, providing for removal of solid propellant from missiles. The process can be accomplished by several methods differing in the degree of ecologic acceptability and economic expediency. Above all this is the flushing of solid propellant from the engine combustion chamber by a high-pressure stream of water with subsequent separation of its components from the resulting suspension. Later they can be used as secondary explosives in mining or any other sector of industry, and engine cases and missile containers can be used both in the Army as well as in the national economy. If it is necessary

to divide them into fragments it is possible to use technologies developed at the Military Academy imeni F. E. Dzerzhinskiy. For more than 30 years its specialists have been introducing technologies for cutting up metallic and nonmetallic materials and constructions using linear shaped charges.

These technologies were used in the destruction of intermediate range missile containers and many other objects of space and military equipment. Their merits include the essentially instantaneous separation of material up to 60 mm thick (for steel) at an average rate close to 8 km/sec, harmlessness to attendant personnel and ecologic friendliness. The use of linear shaped charges permits avoiding an excessively powerful explosion, since only 58 grams of explosive per running meter is needed, for example, to reliably cut a steel structure 10 mm thick or a fiberglass structure 15 mm thick.

Academy scientists also developed other methods in the 1980's: thermocryogenic destruction of solid-propellant charges by alternate thermostating from minus (around -60°C) to plus temperatures; selective dissolving of fuel components with their subsequent extraction; and ultrasound and shock-wave destruction of charges in the engines. All are ecologically clean and economically advantageous, are rather well studied and have been checked experimentally, but a technical-economic and ecologic substantiation must be performed to compare these methods and select the optimum one. Such work, with appropriate scientific accompaniment, can be performed by the collective of their creators and by economists within the scope of the State Program at specially organized industrial bases or centers.

To ensure fulfillment of the government decision to recycle missile equipment and weapons using ecologically clean and economically expedient industries, it is necessary to develop industrial technologies and form structures controlling all phases of the destruction process (from the arrival of weapons from troops to marketing the products of their processing in the national economy or in the Russian Federation Ministry of Defense system). The legal, legislative and international aspects of that method of destroying missiles must be studied.

The principles set forth also can be used in eliminating missiles with liquid-propellant engines. In this case the main problems are to destroy or process the missile liquid propellants, neutralize the objects in which they were contained, and cut up the containers. Scientists of the Military Academy imeni F. E. Dzerzhinskiy have developed unique methodologies of priority importance in world practice. They help to ensure the deepest decomposition of liquid missile propellant components to harmless chemical substances by a sufficiently economical and ecologically clean method.

Helicopter Support

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[Article by Lieutenant Colonel Ye. Matveyev]

[Text] In the development of military aviation, the 1950's were characterized by the beginning of wide use of helicopters for fire support to ground troops, aerial reconnaissance, communications support, movement (landing) of personnel and cargoes and conduct of antisubmarine warfare. This was demonstrated in part by the Tushino airshow in 1954, during which Mi-4 helicopters landed an assault force with artillery. During the U.S. war against Vietnam, rotary-wing craft became a more and more effective and massive means of warfare: U.S. aircraft flew around three million sorties, but helicopters flew eight times more—winged aviation ended up in the shadow of rotary-wing aviation for the first time. This trend saw further development during combat operations in Afghanistan.

In parallel with the improved design of helicopters, aviation engineering support to their flights improved. In 1963 a unified organizational structure of the regimental aviation engineering service was introduced for all our air components. In accordance with it, specialty servicing and maintenance teams were subordinated to the squadron commander through the deputy for aviation engineering service. The new system and new methods of preparing aviation equipment were formulated in a corresponding manual. A special place was set aside in this document for questions of aviation engineering support to unit combat training, reliability of in-flight operation of equipment, and arrangement of its organizational maintenance.

New generations of rotary-wing craft have become operational during the past three decades. Their missions and employment conditions became different. Meanwhile, the structure of the system of aviation engineering support to combat training and combat operations of Army aviation remained practically unchanged. This discrepancy was manifested especially acutely in the period of combat operations in Afghanistan, when entire helicopter squadrons often operated for a lengthy time as a unified body together with Ground Troops units and formations.

Here is just one of numerous examples. During June-August 1980 six Mi-8's, one Mi-9, eight Mi-24's, two Mi-6's and one Mi-10 operated for two months as part of a grouping of ground troops formed from units of a motorized rifle division and an air assault brigade in the Taloqan—Konduz—Sar-e Pol—Mazar-e Sharif—Meymaneh area. In making raids, the grouping advanced from east to west through northern Afghanistan. It was based in one place for no more than 2-3 days. Ground troops prepared landing sites, provided security and defense, and brought up ammunition. In addition, they prepared basic loads of ammunition and loaded helicopters with air-delivered weapons. For example, the arming team included one aircraft mechanic for air-delivered weapons and 5-6 motorized riflemen (landing personnel), but teams for preparing basic loads of ammunition were formed entirely from motorized riflemen. The unit medical officer was in charge of filling ammunition belts. Ground servicing and maintenance equipment proceeded in a common column and were transported basically with the help of armored equipment.

When helicopters made forced landings in combat operations areas, soldiers of combined arms subunits were first

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to hurry to them. They assisted the aviators in defense and in restoring the craft. There was an instance where a helicopter made a forced landing in a marshy area in the vicinity of Feyzabad. An armored personnel carrier was used to extricate it and transport it to the repair site.

Army aviation was transferred to the Ground Troops in 1990. This now permitted viewing its aviation engineering support as the result of a natural interworking of two systems: helicopter maintenance and technical support to Ground Troops armament and equipment. That approach was dictated above all by features of Army aviation employment. They include above all the simultaneous use of a home airfield and dispersion fields and lengthy combat operations by small elements, pairs and individual helicopters in isolation from permanent bases. In addition, Army aviation has to perform assigned missions in close coordination with ground troops and under conditions of combat dynamics, high intensity in use of armament and equipment, and substantial disruptions of rear lines of communication.

All this dictates the need for using technical support of the Ground Troops in the course of aviation engineering support to helicopter flights. For this it is advisable to have special combined entities (forces and assets), which would accomplish common measures for aviation engineering support and technical support to combat operations of air, armored, engineer and motor transport equipment and missile-artillery armament. Structurally they should include aviation engineering support elements of the combat entity (unit, subunit) itself and elements of the system of technical support of the Ground Troops supporting the servicing and maintenance of aviation equipment.

These entities will be repair-overhaul-rebuilding and recovery companies and battalions, aircraft maintenance teams, and unit aircraft repair shops. Some of them are standardized (for example, subunits for performing metal-working-mechanical, welding-soldering, assembly-disassembly, filling-arming, recovery, finishing and other work) and the others specialize in individual kinds of armament and military equipment. The makeup of subunits depends on the variant for performance of the assigned mission and the scope and nature of work to collect, recover, overhaul, rebuild, service and maintain armament and equipment.

It is planned to set up joint ammunition and fuel replenishing points in the immediate vicinity of combat formations and firing positions to perform filling and arming work, and to perform fueling with the help of helicopters. Personnel of recovery companies and battalions will collect and recover equipment, including aircraft; transport-attack helicopters will be used if necessary.

It is proposed that aircraft organizational maintenance be done by personnel of special subunits of the separate repair-overhaul-rebuilding company (battalion) type. They will help air unit crews and maintenance teams. The deputy commander for armament of the large strategic formation or formation and his staff are responsible for overall organization of technical support (the sequence and procedure for servicing and maintenance, recovery,

and overhaul-rebuilding), and aircraft maintenance specialists are responsible for directing the work. Calculations show that such an integration of forces and assets is capable of improving the functioning efficiency of the entire system by 8-12 percent depending on conditions of aviation equipment basing, the intensity of its use, and enemy opposition.

Even Soldiers' Food Has Its Strategy

94UM0565F Moscow ARMEYSKIY SBORNIK
in Russian No 1, Jul 94 (signed to press
30 Jun 94) pp 25-27

[Article by Colonel (Reserve) G. Burmistrov, candidate of military sciences, and Lieutenant Colonel M. Yanovich, under rubric "Military Reform: Reality and Prospects"]

[Text] For decades the recommendations of science for a sensible troop diet underwent subjective corrections from above, and changes were made in standard rations not as an urgent necessity, but as the latest concern of the party and government for the Armed Forces. As a result, even fundamental additions to the soldier's fare at times have not been used with greatest effectiveness.

To illustrate what has been said, we would like to recall an example that is old, but in our view very indicative. In 1975 it was decided to supplement the soldier's ration with chicken eggs, and the appropriate memorandum was prepared for the government. A. Grechko, the minister of defense at that time, wrote a resolution on the Council of Ministers decision: "Issue eggs only on days off and holidays. Issue eggs only in authorized messes. Issue eggs only in boiled form. Do not substitute for eggs."

The considerations which guided Andrey Antonovich here are not known, but a fact is a fact: organizers of the troop diet complied sacredly with the marshal's resolution for more than 15 years. All suggestions to issue eggs on days of intensive training or under field conditions, and also for making omelettes or, let's assume, fried eggs broke against the incontrovertible: "Unauthorized. Do as the minister demands." And they tried not to think about the fact that this demand often did not conform to life's realities and ran counter to scientific recommendations.

By the way, even military dietetics is not without sin. The adequacy of the energy value of food products to energy expenditures of servicemen's bodies was recognized for many years as the sole criterion of a full-fledged diet. Evidently it was easier to stride with a victorious step that way. Judge for yourselves: the general army ration leaped from 2,660 kilocalories in 1917 to 4,183 in 1988. And as soon as calculated energy expenditures of servicemen equated to the civilian population engaged in heavy physical labor were compensated by the appropriate rations, it was decided that the end to all problems had come.

A one-sided comparison with rations of NATO countries also was misleading: United States 4,250, FRG 4,200, Italy 3,300 kilocalories. True, one very essential nuance was hushed up here: 70 percent of kilocalories in our rations were provided by cereal-grain products. But the fact is, man does not live by bread alone.

This postulate was confirmed especially clearly by the Afghanistan experience. Soviet troops entered there with

the general army dry ration. It seemed that its high energy value (4,400 kilocalories) guaranteed against surprises, but in a hot climate in the high mountains a ration with 600 grams of rye biscuits and canned stewed pork as a basis literally stuck in the throat. Assimilability of the food products was minimal. Soldiers lost weight catastrophically. Persons with dystrophy appeared. Worried command elements sought and did not find the causes...

They turned to Central Food Directorate specialists for help. After assessing the situation on site, they developed a completely new ration, later called a mountain ration, in extremely short time periods. It included canned dinner dishes of higher food value, fruit juices, condensed milk, canned meat in small (100 gram) packaging, caramel and so on.

It was reported from the troops that the ration was successful. It was decided to arrange its production and delivery to 40th Army, but medical personnel were alarmed. According to their estimates, soldiers in Afghanistan expended up to 6,000 kilocalories daily under combat conditions, but there were only 3,500 in the mountain ration. A clear shortage.

A representative commission flew to 40th Army to make a final decision. It also included one of the authors of this article. For ten days we observed airborne personnel of 1st Company, 355th Airborne Regiment, 103rd Airborne Division, who were fed the new ration in the course of intensive combat operations. And we became convinced that in view of good assimilability, the mountain ration surpassed existing ones and was suitable for the diet of servicemen performing combat missions in mountainous terrain with a hot climate.

Scientists working on troop diet got the opportunity to expand their sphere of activity with the beginning of military reform. This was facilitated in particular by a Government decision on improving the organization of servicemen's diet. To fulfill the decision the Scientific Research Institute of the Food Concentrate Industry and Special Food Technology (director Colonel V. Dobrovolskiy, candidate of military sciences, docent) was charged with performing appropriate scientific studies.

As their first order of business, Institute specialists together with Military Medical Academy representatives visited units and subunits of essentially all branches and combat arms stationed in various climatic areas. Specifics of service were taken into account in the research. For example, in the Navy scientists worked with crews of surface ships and submarines (autonomous [sic, probably nuclear] and diesel). Analyses of the blood of volunteers who offered to help in the research provided valuable, objective data. The assembled factual material was systemized and generalized.

Then came the first surprise. It was learned that energy expenditures of servicemen are not 4,000-5,000 kilocalories per day as previously assumed, but 3,000-3,500. This was explained by the mechanization of military labor, which had increased considerably of late. We will recall also that at one time energy expenditures were established approximately. Was that not why, in receiving a ration with a calorie content considerably surpassing actual

energy expenditures, 46-55 percent of pilots, for example, were distinguished by excess body weight and 15-25 percent had obesity of the first degree? It was also determined that in the course of service more energy is expended not by navymen and pilots, but by airborne personnel, and after them motorized riflemen.

The scientists transformed data on the actual diet into medical-technical requirements for the ration. Their bases were contemporary dietetic views adapted for specifics of military labor, particularly the concept of a balanced diet. In addition to energy value, it is now evaluated by almost 50 more indicators. For example, the optimum ratio of proteins, fats and carbohydrates is characterized by the ratio 1:1:4 (rations now in effect correspond to the formula 1:1:6-7). Proteins must account for 14 percent of the overall calorie content of the diet, of which 55 percent has to be of animal origin. Fat comprises no more than 30 percent of the overall energy value, and the linoleic acid indispensable in food makes up at least 6 percent.

And now about rations proper. As we know, the Armed Forces have around 1,500 military specialties, and more than 50 basic and supplementary rations corresponded to them as of the early 1980's (some differed from each other by 5-10 grams of a particular food product).

The developed medical-technical requirements were persuasive as to the advisability of having a total of five rations in the Armed Forces—basic, naval, flight, therapeutic and cadet (for students of Suvorov and Nakhimov schools). A supplementary diet is authorized for a very narrow circle: airborne personnel when making jumps, submariners on deployment, aquanauts and certain others.

But the work which has been done does not mean that the end result has been achieved. Field testing, which unquestionably will make its own corrections, lies ahead. But the main direction in organizing the diet already has been clearly defined: there will be less grain and cereals in rations, but on the other hand more meat; and fresh fruits, cottage cheese, cheese, sour cream and coffee drinks will appear. Only do not forget that we are speaking for now about standard rations that are ideal from the standpoint of modern dietetics, i.e., a qualitative and quantitative set of food products has been determined that are needed by the body depending on official duties being performed. By the way, dieticians now are troubled by another question: Will it be strictly complied with? The fact is, the sets of food products developed by scientists are more expensive than those now existing.

Still, dietary specialists look optimistically to the future. Colonel A. Shanin, chairman of the Central Food Directorate Scientific-Technical Committee, believes that movement toward the reference point indicated by science most likely will occur in stages, and not just because the proportion of expenditures for food in the defense budget rose by 3.3 times from 1990 through 1993. Alas, the economic situation changed fundamentally.

One thing can be asserted unequivocally: the new rations may not justify hopes being placed on them without an improvement in the dietary system existing in the Army. By the way, this already is the subject of a separate

conversation, which, we hope, will take place in the pages of ARMEYSKIY SBORNIK.

Planned Costs, or a Few Words About Inadequacy of Command Training and How It Can Be Improved

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in Russian No 1, Jul 94 (signed to press
30 Jun 94) pp 28-32

[Article by Lieutenant General Yu. Proshin, chief of Volga Military District Combat Training Directorate, under rubric "Methodology: Search, Practice"; photograph of author included]

[Text] The Russian officer. He has been distinguished in all times by high professionalism, many-sided knowledge and culture. And recently as well, Major General Leonard Holder, commander, U.S. Army 3rd Infantry Division, spoke this way about officers of 27th Guards Motorized Rifle Division commanded by Major General A. Sidyakin: "These are extra-class professionals, and I am sure not one general would reject having such specialists subordinate to him."

Thanks to the American general for such a high appraisal of our officers' combat proficiency. But at the same time I ask myself: Is everything that good for us? The command training of officers of Major General K. Suslov's formation again was evaluated only as satisfactory in this training period.

I automatically recall exercises, drills and practice inspections at which it was impossible not to note that the professionalism of officers is dropping from year to year. And it is most alarming that this is characteristic of a number of units and formations in the district. The level of knowledge, abilities and skills, both general military (including firing, driving fighting vehicles, and drill and physical training) as well as professional (the ability to organize for battle, support it comprehensively and control subordinates), is falling. And at times this process becomes uncontrollable.

Just what is the reason for what is occurring? Perhaps requirements being placed on officers are too high? But these requirements, figuratively speaking, are that measuring rod below which one must not sink. They are dictated by the development of military affairs as a whole. This is why I would like to analyze now the effectiveness of the command training system.

I would like to clarify right off that the goal of this article is not to criticize existing programs and instructions, but to seek optimum solutions for introducing them to training practice.

It is common knowledge that the planning of command training is based on programs, on organizational-methods instructions of the commander in chief of Ground Troops, and on decisions of the district commander. But in the last few years the organizational-methods instructions of the commander in chief of Ground Troops essentially have excluded a number of officer job categories from the training process.

Thus, division and regimental chiefs of combat arms and services work only a few days a year at one session under the direction of senior chiefs. Yes, there also is independent work and individual classes, there also are firing and driving drills and so on. A system for training staffs exists which has to ensure the necessary level of officer training, but this does not occur in practice. At command and staff exercises we bitterly observe listless and at times simply incompetent actions of most of the officers at the regimental level. It is the very same picture with division headquarters.

And how about battalion, company and platoon commanders? The fact is, they train under programs and their results should be higher. But I compare data from inspections for the 1990-1993 training years and conclude that here too far from everything is well, for the level of satisfactory grades was 25-35 percent in 1991, up to 45 percent in 1992 and 60 percent in 1993. And again I am convinced that the existing command training system is imperfect.

I return to the command training program and calculate just how many hours a month a regimental, battalion and company commander has to work. Counting classes which the regimental commander is obligated to hold personally (25 hours) and preparation for conducting them (75 hours), I come up with 100 hours. For the commander of a battalion at reduced strength it is 160 hours, and at full strength 64 hours. But the Russian Federation Supreme Soviet decree of 1 January 1993 defined the status of servicemen, and Article 11, Paragraph 4 states that an officer "is given at least one day off weekly, but at least six days off a month."

And so the average work month should be 24 work days or 184 work hours. But if the officers indicated give up a large part of their work time for command training, then just when will they resolve official matters? A clear discrepancy is apparent between the command echelon's real capabilities and program requirements. This discrepancy arose long ago and everyone somehow got used to it.

It would appear there is a way out of the situation at hand. To begin with I would determine precisely what percentage of overall work time must be set aside for command training. It is obvious one should approach a solution to this problem comprehensively, taking into account achievements of modern military-pedagogic science.

On the other hand, the commander's chief concern is to train subordinates, and above all, as we say, in the profession according to position, i.e., not in military affairs in general, but specifically in the profession according to position.

And if we approach command training from this standpoint, then in my view the existing program is simply a set of training subjects that, moreover, are chosen without consideration for combat experience either of World War II or of local conflicts. Moreover, the number of hours allotted often provides no opportunity not just to train an officer in something specific, but even to maintain skills received earlier.

I will cite certain data for comparison. For example, a trainee must perform an exercise at least twice a month in order for firing skills not to be lost. It is the very same with driving fighting vehicles and drill training. The exception is physical training, where practices are required considerably more often. These data have been confirmed in the course of research conducted by officers of the district combat training directorate.

This is why it is necessary to place the emphasis more carefully in compiling the command training program. And if we say that professional training (and this is tactical and special tactical training above all) must be regarded as of paramount importance, then it should be singled out in a separate section. This means classes also should be held strictly according to job assignment.

It must be noted that officers who are training group leaders experience a major load in connection with the organization and conduct of classes in social-state training. And this is additional time (and no small amount) set aside in guidance documents, but unfortunately not backed up by actual capabilities. Therefore in practice the aforementioned classes often are held nominally.

To correct the situation we proceeded as follows. To begin with we clearly singled out four main directions in the command training system.

The first is training in the profession. Above all this is tactical or special tactical training. Senior chiefs and commanders who are fully responsible for the organization and conduct of battle must engage in it.

The second direction is maintaining primary skills obtained in general military subjects (firing, driving and so on) and necessary to each commander in his command and combat work.

The third is officer methods training.

And the fourth direction is indoctrination [vospitaniye] of the soldier and citizen.

Thus, as a military-pedagogic process, command training now fulfills four basic functions: educational [obrazovatel'nyy], indoctrinational [vospitatel'nyy], developmental, and psychological training. At the same time, the military-pedagogic system as a whole represents an aggregate of structural components with its inherent goals, information science, assets, pedagogues and trainees. Based on this, we attempted to create our own command training program (without going beyond the scope of the suggested program), which we tried out in the troops this year. In it we tried to distribute the leaders' functions and responsibility precisely.

On the whole the program has three sections: training in the profession, which includes tactical (special tactical), mobilization and technical training; social-state training; and general military training.

Professional training is conducted in command training groups by the leaders—senior chiefs and commanders. It accounts for 50 percent of overall time, and at least one-third of the topics are set aside for training officers for one level above the position held.

Social-state training is conducted in specially formed groups under the direction of officers of the staff for indoctrinational work and under the general direction of the deputy commander for indoctrinational work.

General military training is planned and conducted at the unit level for staff officers and subunit commanders who have no personnel with the following periodicity. Fire training at least twice a month, including once at night. Technical training and driving at least once a month. Physical training 3-4 hours a week. Drills in NBC protection three times a month, including one to study equipment of NBC protection troops, one to perform tasks and one in practical rehearsal of individual and group standards. Practice in military topography once a month. Military-technical information and political information briefings each twice a month.

A training record is kept by unit staffs personally for each of the above categories of servicemen.

Subunit commanders who have subordinate personnel hold and take part in classes with subunits in general military disciplines.

Three special 20-hour courses additionally are included in the program: military pedagogics and psychology for leadership personnel, a special course in self-management of the officer's training activity in his command training system, and a course in military-pedagogic games.

The goal of the special course in military pedagogics and psychology for leadership personnel is to improve psychological-pedagogic knowledge and skills of class leaders. This in turn will permit developing a unified approach and setting up an integral system in units for evaluating and monitoring officer training activity.

Class forms and methods vary. There are both traditional lectures, seminars and roundtables here as well as new ones such as pedagogic games. Subject matter of the special course is broad. It encompasses the history of training officer cadres in Russia and in Europe, psychology of the higher military school, and the system of monitoring and evaluating the military-pedagogic process in command training. Simply speaking, we prepare class leaders by relying on modern achievements of military-pedagogic science.

The program also includes a special course in self-management of officer training activity. The goal is to teach young officers how to learn in the command training system and also to help them master skills of mental labor, beginning with choosing goals and then planning, monitoring and correcting the results.

The subject matter is determined from the goal of the classes. Emphasis is placed on pedagogic principles of work with training literature; preparing for seminars; training memory, attention and thinking; and developing psychological-pedagogic knowledge and skills.

The course on military-pedagogic games which reflect the forms and methods of problem-oriented active training is included as a separate section in the program. Combining this method with traditional training is an effective means of general and professional development of trainees. Its

essence is the class leader's creation of interconnected problem-oriented situations where trainees cannot achieve set goals by methods known to them, which prompts them to seek new explanations. The problem-situation must meet the following requirements. First of all, it must be based on events which occur in a real situation. Secondly, situations should be interesting and instructive.

The subject matter of military-pedagogic games encompasses the methodology of preparing and conducting games and using them in the course of tactical, weapon and drill training classes and classes for studying regulations. On the whole, all three special courses in our view should fill a gap in the methodology of conducting combat training classes, target leaders on an in-depth study of principles of pedagogics and psychology, and increase their overall and intellectual level.

In addition, we believe that field proficiency contests are an important direction capable of elevating the level of officers' knowledge, abilities and skills. They are held annually in district troops. And in a year when a contest is not conducted at the Ground Troops level, we conduct it for ourselves in four phases: first in military units by 23 February, second in divisions by 9 May, third in large strategic formations prior to 15 August and the fourth phase at the district level prior to 24 September. Commanders of maneuver (artillery) battalions and their deputies, company (battery) commanders, and commanders of platoons and their equivalent which took 1st, 2nd and 3rd place in their groups in the first through third phases of the contest are brought in for the concluding phase.

Experience has shown that with sufficient incentive, the majority of officers are eager to take part in such a contest, they prepare for it and demonstrate rather good results on the whole.

And I would like to dwell on one other point. A well conceived system for evaluating an officer's official activity and the evaluation of his command training are becoming an incentive of no small importance for activating command training.

In our view, the evaluation of an officer's official activity must meet the following requirements. Above all it must be extremely objective and comprehensive, encompass all aspects of his practical work and be realistic, taking into account changes in questions of support to combat training. It must have prospects, i.e., on receiving an evaluation, the serviceman should take his place among officers of a similar category. This in turn enables him to lay claim to an advancement in service by raising the evaluation.

On the whole, it is enough to have three objective indicators in the evaluation of an officer's official activity. These are personal training, level of the subordinate subunit's preparedness, and (if the officer is chief of a service) an evaluation of his service.

The personal evaluation of an officer includes preparedness for command, the basis of which is training in a profession (i.e., the ability to organize for battle and control subordinates in battle); methods proficiency; and the officer's

military-pedagogic skills. By evaluating an officer's official activity in that manner, we will be able to elevate the role of all command training.

Summing up what has been said, I will name the basic ways to improve command training. Above all it is an improvement in its structure, i.e., a clear delimitation of spheres of responsibility for particular training subjects, maximum possible load on group leaders, and intensification of the training process. And of course it is an improvement both of command training programs as well as of military-pedagogic proficiency.

Further, it is the mandatory introduction of new military-pedagogic techniques for training both group leaders as well as trainees and the introduction of new training forms and methods. Finally, it is the development of effective criteria for an evaluation of command training and the provision of real incentives for officers who have achieved high results.

Quality and effectiveness of command training have improved thanks to introduction of the new program to the life of district troops. This gives the right to search further for ways to success.

A Specialist's Comments

*94UM0566B Moscow ARMEYSKIY SBORNIK
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30 Jun 94) p 32*

[Item by Colonel A. Samorukov, deputy chief of Programs Department, Ground Troops Main Combat Training Directorate]

[Text] We welcome a search for new forms and methods for improving the training of officer personnel. Therefore the article "Planned Costs" generated special interest. I will not conceal that I read the article with partiality, and several questions arose immediately. Above all, the number of hours which the author sets aside for the regimental commander's preparation and personal conduct of classes with officers and with subunits generates bewilderment. An elementary calculation shows that the number of these hours actually necessary in our opinion is considerably less. I would like to learn what assumption the officer used.

The appearance of such new terms as general military training, military-pedagogic game, special self-management course and the like also generates bewilderment. They are not used in guidance documents or in professional terminology.

Finally, a few words about the program and the methods aid on officer command training developed in the district. A unified system for officer command training has been adopted and exists in the Ground Troops which provides for maintaining and upgrading the professional level of officer personnel. At the same time, it provides sufficient flexibility in planning officer training by giving the unit commander the right to make changes in program content based on local conditions and features of missions being accomplished. But at the same time, it does not permit excluding individual disciplines or introducing new subjects to the training system.

And even from an ethical aspect, the compilers of their command training program should have coordinated it with the Main Combat Training Directorate for possible introduction of interesting approaches to officer personnel training.

Combat Operations of Ground Troops Subunits: Tank Defense in the North

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30 Jun 94) pp 33-37

[Continuation of article by Colonel A. Petrov, candidate of military sciences, under rubric "Combined Arms Battle"; for beginning see VOYENNIY VESTNIK, Nos 1, 2, 4, 5, 1994]

[Text] Increased combat readiness, a reduced number of tanks with a simultaneous increase in combat potential (capabilities) through an improvement in qualitative parameters, and expanded combat independence are basic directions for organizational development of tank units and subunits intended for operations in northern areas. At the present time they are represented by separate tank battalions of motorized rifle formations and by separate tank companies of motorized rifle units.

The defense of motorized rifle elements in the North as a rule is organized on a wider frontage than under ordinary

conditions, on possible avenues of enemy attack leading to vital areas, and in seacoast sectors where an amphibious landing is expected. Reconnaissance and patrolling are conducted in rugged sectors where an attack is less likely, and if necessary a defense is established involving a minimum number of forces and assets.

Main efforts are concentrated on holding road junctions and adjoining hills, defiles, built-up areas, crossings over water obstacles and other important objectives. The defense usually is built as separate company and platoon strongpoints which intercept accessible axes. Intervals between strongpoints may be increased and constant observation of them is established. In addition, they are covered by manmade obstacles, fire of artillery and other weapons, and ambushes.

The battle formation is deeper. Second echelons and reserves are dispersed at several locations in readiness to conduct counterattacks, occupy prepared areas and destroy an enveloping enemy, his airborne and amphibious assault forces and his raiding and reconnaissance parties.

The mission of tank units and subunits is to destroy the enemy, taking advantage of their mobility, firepower and striking power. Deep snow and low temperatures in winter and marshy areas of considerable size in summer reduce the mobility of all combat arms, including tanks (see table), but their firepower is not reduced since low temperatures affect tank armament less than any other armament.

March Capabilities of Tank Units and Subunits in the North

Kind of Equipment	Nature of Tundra					
	Mountainous		Marshy Wooded		Marshy	
	Maximum speed, km/hr	Extent of day's march, km	Maximum speed, km/hr	Extent of day's march, km	Maximum speed, km/hr	Extent of day's march, km
Tanks, BMP's, BTR's, GT-T's [heavy caterpillar tractors], MT-LBV's [multipurpose, wide-track vehicles]	10-15	80-120	8-15	80-150	5-15	50-120
Mixed columns	10-12	80-100	8-10	80-100	5-10	40-80

But the overall concept of tank combat employment in northern areas is based on reinforcement of the defense of motorized rifle units and subunits. Tanks are the backbone of its stability. They assist motorized rifle subunits in a stubborn defense of key terrain sectors and they maneuver, forcing the enemy to operate on unfavorable axes. They damage him by surprise fire. As part of mobile groups (or as individual weapons) they engage the most vulnerable and vital elements of the attackers' combat alignment.

The primary mission of tank units and subunits is to operate in direct support of infantry. In the battle formations of formations and brigades, tank units and subunits usually are disposed at 3-4 positions in the second echelon or form a combined arms reserve ready to execute counterattacks (on 1-2 axes) or occupy 1-2 lines of firing positions. In addition, some tanks are capable of participating in the destruction of tactical airborne and lake assault forces which have landed.

A separate tank company may operate in the battle formation of a motorized rifle regiment as part of the combined

arms reserve or reinforce the defense of motorized rifle battalions by platoons on axes accessible to enemy armored equipment. Use of tanks in an ambush or as roving weapons also is not precluded.

To achieve success in battle one should make maximum use of terrain relief, carry out thorough engineer preparation and maskirovka [lit. "camouflage", however, includes "concealment" and "deception"—FBIS] in the upcoming operations area, organize an effective system of fire and carry out measures to establish a perimeter defense.

A rational disposition of forces and assets acts as an important condition here. For example, it is advisable to consider the battle formation of companies not as a system of strongpoints, but as their combination with ambushes and concentration areas of tanks and MT-LBV's (armored groups).

It is proposed to have no more than one platoon strongpoint interdicting an important axis on the company FEBA, and ambushes of individual tanks and MT-LBV's on secondary axes. The other tanks and MT-LBV's (the

armored group) are concentrated in the depth for operations from lines of firing positions and for conducting brief counterattacks.

The FEBA should not be allowed to be marked by strongpoints stretched out laterally. It must be defined by fire, for not only are tanks and MT-LBV's conducting fire against the approaching enemy, but artillery as well from indirect firing positions.

At the same time, the suggested disposition of a first echelon platoon permits covering the entire company frontage from the strongpoint and from ambushes with a double reserve in range of effective fire of modern tanks (the range of effective fire of the TUR [tank-launched guided missile] is 4-5 km and a grazing shot of the BPS [armor-piercing sabot round] is over 2 km).

To prepare a strongpoint and ambushes, it is necessary to select terrain most favorable in relief and vegetative cover that permits launching the tank-launched guided missiles to long ranges, making favorable use of dead ground from the enemy's side, and maneuvering covertly.

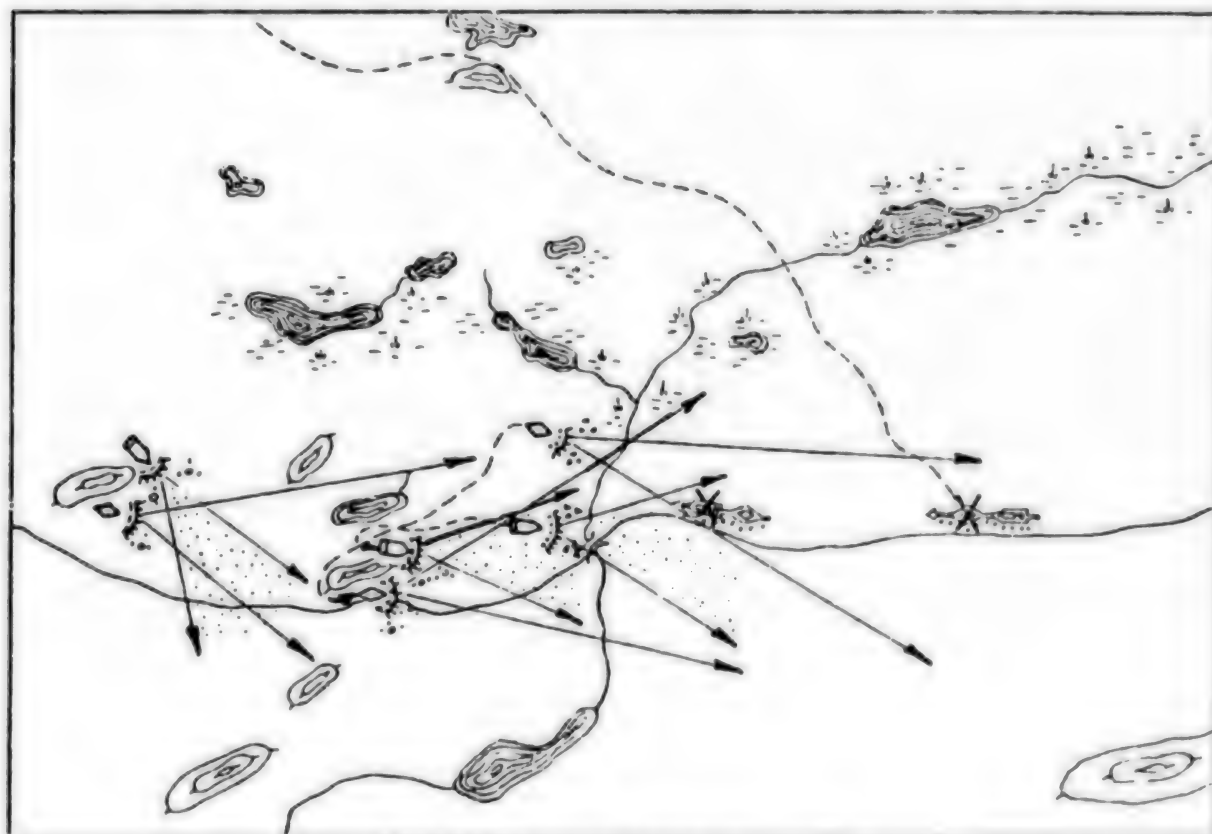
As shown by combat training experience of Leningrad Military District troops, joint actions (at a distance of 250-300 m) of mixed weapons such as those of the tank

and MT-LBV are most effective in ambushes. In addition, crews assigned to an ambush must be able to adjust artillery fire.

Based on possible rates of enemy advance, capabilities of the tank (MT-LBV) to detect and engage armored and other targets, and also time necessary for changing a firing position, it is recommended preparing 3-4 firing positions for each tank (MT-LBV) operating in an ambush. It is best to dispose them in elevated terrain sectors supporting observation and fire against the enemy on routes of forward movement at ranges no closer than 1-1.5 km. Depending on local conditions, firing positions may be up to 500 m from each other laterally and in depth.

It is advisable to concentrate all data on organization of tank units and subunits for battle in the formation (brigade) defense with one of the staff operations section officers. It is he who draws up the plan for combat employment of the tank units and subunits.

It should be emphasized that in contrast to ordinary conditions, questions of employing tank units and subunits must be developed in greater detail in decisions of commanders organizing for battle in northern areas. Thus, it is required to specify the grouping of tank units and subunits, the means of reinforcement on accessible axes by echelons, and methods of their employment in battle. The



Employment of tank and MT-LBV in ambush

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decision also reflects the procedure for bringing in tank subunits to engage the enemy by direct fire and concentrated fire at long ranges.

Since a large number of the tanks operate in direct support of infantry, the procedure for employing tank subunits should be reflected in greatest detail in the decisions of regimental commanders. It is recommended that the decisions indicate the following: subunits to be assigned for direct fire for reinforcing first echelon motorized rifle battalions, and also as part of a raiding detachment if one is assigned; reference points and procedure for denoting them; subunits to be assigned to the second echelon (combined arms reserve), their concentration areas and routes of forward movement; procedure for replacing tanks from the first echelon (those being withdrawn from battle, those which have lost combat effectiveness); and other data.

Organization of a defense begins in tank units and subunits from the moment the combat mission is received from the senior commander. And the North's physical geographic conditions affect all elements of this work in a most direct manner. In particular, the possibility of seeing enemy targets at ranges of 2,000 m and more is one of the conditions for tankers' effective performance of fire missions. Therefore, commanders assess the effect of the external environment above all from the standpoint of visibility.

The terrain is studied visually (by observation), from a map, and from aerial photographs. It is evaluated most completely with the help of maps and aerial photographs, but with mandatory updating during ground reconnaissance. Various reference works and geographical descriptions are useful here, and in the period of polar night each tank unit and subunit must have a map indicating depths of snow cover.

Because of terrain that is difficult of access and the absence of a developed road network, the enemy most often will begin attacking from a position of direct contact. Main attacks are most likely on axes where the concentration, deployment and assault of his main grouping in battle or approach march formations are possible.

Therefore in organizing fire engagement (including the system of fire), tank unit and subunit commanders provide for a zone of continuous fire of all kinds ahead of the FEBA and in the depth of the defense, and also the establishment of fire "sacks." In addition, conduct of multitiered fire is planned on mountainous tundra. Weapons are disposed both on hillslopes facing the enemy as well as on reverse slopes.

When the decision for the defense is made and it is organized (in addition to the usual measures and with consideration of features noted above), forces and assets are specified for destruction of enveloping subunits and for support to operations during polar nights, in a snowstorm or blizzard, in fog, in bitter cold and in the season of bad roads.

In the security area a tank subunit defends a key terrain sector and inflicts damage on the enemy from maximum possible range in coordination with elements of other combat arms. Its operations here are aimed chiefly at stubbornly holding positions, at a perimeter defense and at forcing the attackers' forward detachments to seek bypass

routes and advance into prepared zones of massed fire, into fire "sacks," and onto terrain sectors difficult to negotiate and inaccessible for tanks.

When the enemy moves to a previously specified line, the tank unit delivers a surprise attack against the attackers' flank and rear without becoming engaged in a two-sided firefight, and if necessary (if the enemy reaches a certain line, with a threat of encirclement and so on) it changes firing positions in an organized manner, shifting to a new, previously reconnoitered line.

After performing the mission, tanks operating from ambush move to an assembly area and join their own subunits. When the attackers' forward detachments approach the zone of effective fire of tanks and MT-LBV's from the first position, [the tanks which had been operating from ambush] shift into the depth of the defense under cover of the latter and take up a new area (strong-point). Maximum damage is inflicted on the attackers in the attack position and when launching an assault.

On accessible terrain the alignment of the system of fire of tank units and subunits essentially does not differ from ordinary conditions. It is considerably more complicated to organize it and realize the capabilities of tanks on mountainous and marshy wooded tundra. Therefore when the enemy moves to within range of their fire, he is destroyed above all by concentrated fire of companies and platoons, including on roads and cross-country routes.

In the battle for the first position it is possible to employ tank subunits (at platoon or company strength) for inflicting damage on the enemy from lines of firing positions. Fire is commenced from ranges ensuring surprise. Considering the limited number of roads, one should attempt to destroy his armored targets on bridges, in defiles between lakes and marshes, and next to fords.

The counterattack of a separate tank battalion (at full strength or with a portion of forces) is permissible in the battle for the second position, if of course terrain trafficability permits it to be executed. The battalion moves to the indicated line in a march column under cover of a company or platoon (depending on terrain) that has been moved forward in advance and is supporting operations of the main body.

Calculations show that with commitment of second echelon battalions, the enemy potentially is capable of surmounting the first position and penetrating into the space between positions up to the second position. There may be over 50 tanks and 60 APC's in his makeup. In addition, it is not precluded that in accordance with the "air-land operation" concept, there will be remote mining of the terrain and a tactical airborne assault force will land to isolate the defending formation's first echelon.

Commitment of reserves with an overall strength of up to a brigade task force is envisaged when there is an attempt to penetrate the defense at the second position. The probability of surmounting it now increases considerably.

Meanwhile, in calculating a formation's capabilities of combating a grouping that has penetrated, it is necessary to proceed from the assumption that the second echelon regiment and the second echelon battalions of first echelon

regiments (depending on the situation) could fight in the security area (at a forward position). Their losses most likely will approach 30 percent or even more. Moreover, a portion of the weapons will be assigned to combat a tactical airborne assault force. The overall number of tanks for a counterattack will be 34-36, but at least 60 of them are required. There are no such forces in the formation and it will not be able to achieve the goals of the counterattack. Consequently, destroying the enemy from occupied positions is the most advisable.

A few words about conducting a defense during the polar night. One of the most important missions is to discover the enemy grouping and prevent its surprise attack. Night vision devices usually are used in the security area. Terrain illumination is accomplished when there are very low levels of illumination. In the course of repelling an assault on accessible terrain, the enemy is illuminated continuously until the assault is disrupted or repelled. Attackers are blinded by suddenly switching on tank searchlights with light filters removed. Illumination of the friendly FEBA is impermissible.

But when the enemy approaches the FEBA, night vision devices are used without restriction and the attackers are illuminated as necessary by tank searchlights (1-2 per company) with light filters removed. The switch-on time is no more than 10 seconds. Greatest effectiveness in using tank searchlights is achieved at a distance of 1,000-1,200 m and sometimes even more. Light support is conducted on several axes at once for disinforming the enemy during a counterattack.

(To be continued)

On Security of Installations and Military Posts

94UM0566D Moscow ARMEYSKIY SBORNIK in Russian
No 1, Jul 94 (signed to press 30 Jun 94) pp 38-39

[Article¹ by Lieutenant Colonel V. Baranov under rubric "To Assist the Commander"]

[Text] Questions of security and defense of installations and military posts acquire special significance today. It was not by chance that VOYENNIY VESTNIK opened the discussion with an article by Colonel A. Zemskov and called on other officers to express their opinion on this problem.

In accepting the invitation for a discussion, I would like to agree with the author in this connection that the criminogenic situation in the country remains complex. Moreover, today there are no preconditions for reducing the level of crime. Criminal elements continue to arm themselves and the demand for firearms is growing as a result. Hence the author's concern becomes understandable: he believes that the existing organization of security and defense of military installations does not sufficiently conform to the present level of crime.

On the other hand, the article is distinguished by a certain academic touch. In my view, the author's recommendations for improving security and defense of installations and military posts first of all are somewhat idealized and do not take existing reality into account in their essence. And existing reality is such that not just any military post,

storage facility and depot can be outfitted with a full-fledged restricted area with technical and engineer security equipment. The fact is that, as a rule, many installations are disposed within a city or settlement, where every square meter of ground is strictly accounted for.

Secondly, outfitting a restricted area with technical and engineer security equipment, such as around military posts, and keeping it in constant operating condition is too costly a matter.

Thirdly, the author's proposed ways and methods for improving guard service do not in themselves bear anything new compared with what exists in the Manual of Garrison and Guard Duties and other documents. Hence there is a certain tendency to make pronouncements for effect with respect to proposed solutions. The cited recommendations probably are suitable for security and defense of installations with a regime, individual depots and some kind of other point facilities. But everything the author proposes will remain a rosy and far from realizable dream for a long time yet for a military post of any scale, let alone one situated within city or settlement limits.

Therefore without denying in essence the importance of proposed measures to improve security and defense of military posts and installations, I would like to mention somewhat different ways of solving this problem which do not require excessive material expenditures. And I am placing emphasis specifically on security of military posts with consideration of conditions of their location and their physical and technical condition.

Let us ask the question: With what does any unit territory begin? Probably with the outer barrier (fence) around it and a network of checkpoints. What role do these elements of the military post play in preventing a surprise armed attack on it? We honestly admit: the most passive role there is. It is not mandatory for criminals to penetrate the checkpoint when there are numerous holes and breaches in the barrier. And if they are in vehicles and have weapons, then it presents no difficulty for them to neutralize a checkpoint detail consisting of three first-term servicemen, two of whom are awake at night. Unfortunately, there are more than enough devices for conducting a criminal action.

As an alternative I propose to change the existing procedure of night duty at the checkpoint and definitely rebuild the buildings themselves architecturally. We should shift from one-story to two-story structures. In this case they will perform the role of unique "guard towers" rising above the fence around the military post. When darkness falls, the orderlies and checkpoint duty man shift to the second story and conduct observation of approaches illuminated by searchlights. The principal function of the detail at night is timely notification of the regimental duty officer about the approach of strangers or suspicious persons.

It is clear that the checkpoint detail will be unable to keep the entire perimeter of the post's external barrier under visual control. Additional forces are needed, particularly inside night patrols. They move about in assigned sectors in contact with each other, with the regimental duty officer and with the checkpoint detail. The optimum makeup of a patrol is two persons. It is advisable to use interior guard

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personnel as patrol members to reduce the number of servicemen activated for the daily detail.

It is common knowledge that the numerical strength of the interior guard varies from 13 to 17 persons. At night one-third is on duty at the posts, another third stays awake within the guardhouse, and still another third rests. But an analysis of instances of attacks which occurred in recent years shows that these two-thirds of the guard often are simply sealed off by the fighters and come under dense aimed fire at the guardhouse exit, and sentries on duty at posts cannot always prevent this. But if we shift to a system of patrolling, then an interior guard consisting, for example, of 16 persons at night is capable of putting out up to seven pairs of patrols. One must be used to secure guardhouse approaches and the others for patrolling the post (three pairs each for the first and second half of the night).

Without question, reliability of security also will depend largely on quality illumination of the grounds of posts and pools, on the strength of storage area gates and locks and on the presence of portable communications equipment. In this case the procedure for patrolling is specified by the military unit commander.

A few words about the unit's duty subunit. The allotment of tasks should be communicated to it on the day before in order for it to be in constant readiness. It is advisable to divide duty platoon personnel into three teams: Team No 1 for reinforcing inside patrols, Team No 2 attached to the checkpoint detail and Team No 3 at the disposal of the regimental duty officer. They leave for their own objectives when alerted. The regimental duty officer subsequently may retarget them to other directions as well using portable communications equipment. Swiftiness of the duty subunit's reaction to any sort of emergency circumstances at night depends chiefly on quality of duty of the company daily detail.

Unfortunately, a tendency is seen in the troops today where the company detail performs duty at night with barracks doors bolted from the inside. Moreover, it is often the practice in battalions to have so-called "responsible" officers and warrant officers on duty at night without any grounds therefor. And these "innovations" in themselves produce a strictly negative instead of positive effect. Will bolts on entrance doors protect the company daily detail from a surprise attack by criminals? They also can penetrate into the barracks easily through first floor windows. Further, at night someone is coming into the barracks all the time: company or battalion officers, the regimental duty officer (or assistant duty officer) on an inspection, other representatives of the regimental daily detail from among first-term servicemen, drivers who have returned from a trip and so on. The orderly very quickly becomes accustomed to opening the entrance doors. If the doors are bolted, the orderly's vigilance is dulled. He already knows that one of the inspectors hardly will catch him clearly sleeping at the locker.

This circumstance unquestionably also relaxes the company duty man, who may quietly "curl up" somewhere. In addition, the presence of a responsible officer at night reduces the company duty man's responsibility for organizing security and defense of his subunit. As a result it

should be recognized that barracks entrance doors open for the night are a unique incentive for reinforcing the daily detail's vigilance in the face of a possible threat on the part of various criminals.

When an alert is declared the company detail also is responsible for timely departure of runners, who set off on their routes with gear, equipment and weapon, but as a rule without a single piece of ammunition for it. What we have is a rudiment of previous years, when the troops were in pursuit of winning an extra second in alerting subunits, with compulsory, ostentatious observance of external attributes of gear and equipment. But today it may happen that runners will have to fight their way to the officers and warrant officers and cover them on the return trip. In any case it should be as follows: if a runner takes up a weapon, then ammunition also is needed for it. Let the soldier lose a few seconds here.

Generalizing what has been said, it can be asserted that quality of organizing troop duty and internal order in the regiment must be considered the first condition for reliable security of military posts. A creative attitude of commanders toward these seemingly common truths which does not go beyond the scope of common sense unquestionably will help in properly performing the mission of security and defense of military posts in our still far from quiet time.

Footnotes

1. See VOYENNY VESTNIK, No 2, 1994.

In Support of Information Transmission

94UM0567A Moscow ARMEYSKIY SBORNIK in Russian No 1, Jul 94 (signed to press 30 Jun 94) pp 40-43

[Article by Lieutenant Colonel A. Domokurov and Lieutenant Colonel A. Drozdov, Military Signal Academy, under rubric "To Assist Communicators"]

[Text] Experience persuades us that as of today the promptness of command and control depends to no small extent not only on the status of communications channels, but also on efforts by specialists monitoring the information flow. Let us examine some possible ways of improving their work efficiency.

At the present time the T/O&E information processing and distribution team at a field communications center monitors the flow of telegraphic messages as well as the collection, processing and delivery of traffic. As a rule, the team consists of a chief and four subordinates and is accommodated in the message center near the communications center operations control equipment room. In a fixed-site communications center it is situated in a separate room.

It is understandable that very many messages pass through the communications center in an exercise period, especially in the peak load hour—see Table 1. And telephone and telegraph communications account for up to 90 percent of overall messages. This means that to promptly transmit and receive information and support a large number of calls, one cannot get by here without strict, efficient control on the part of assigned personnel. And of course a few persons from the message center clearly is not enough today. Judge for yourselves

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Table 1 - Peak Hours Load by Kinds of Communications

Unit of Measurement	Kind of Communications				
	Telephone	Telegraph	Data Transmission	Facsimile	Total
Erlang	17.8	6.35	1.37	1.2	27.02
Percentage	65.9	24.6	5.01	4.49	100

The information processing and distribution team T/O&E permits organizing duty during exercises in two shifts, with two communicators on each shift. Studies have shown that more than 40 messages come into the communications center message center in a peak load hour (see Table 2). Consequently, it is necessary to have three message center

clerks to cope with the load within a normative time period; otherwise the team chief will be forced to take a direct part in processing messages in a peak load hour and he will essentially be unable to monitor their flow. Moreover, telephone calls also now are "without supervision," for neither personnel nor equipment are envisaged here for now.

Table 2 - Message Processing in Communications Center Message Center in a Peak Hour

Priority Category	Messages			Required Number of Message Center Clerks on Shift
	Number	Normative Processing Time, minutes	Cumulative Processing Time, minutes	
Messages with precedence	21-25	2-4	42-100	$N = T_{\Sigma}(\text{min})/60(\text{min})$
Normal	15-18	5	75-90	
Total	36-43	-	117-190	2-3

To find a way out of the situation at hand, we propose to set up a special entity in the field communications center during the time exercise missions are being performed—an information flow monitoring point, which must be part of the communications center operations control center—see Fig. 1. It is advisable to appoint the chief and deputy chief of the information flow monitoring point from among staff

officers, and to appoint duty officers for monitoring telegraphic information flow and the support to telephone calls from among officers from corresponding centers.

These assigned personnel can be accommodated directly in the communications center message center or in another equipment room located near it, but the work station of the

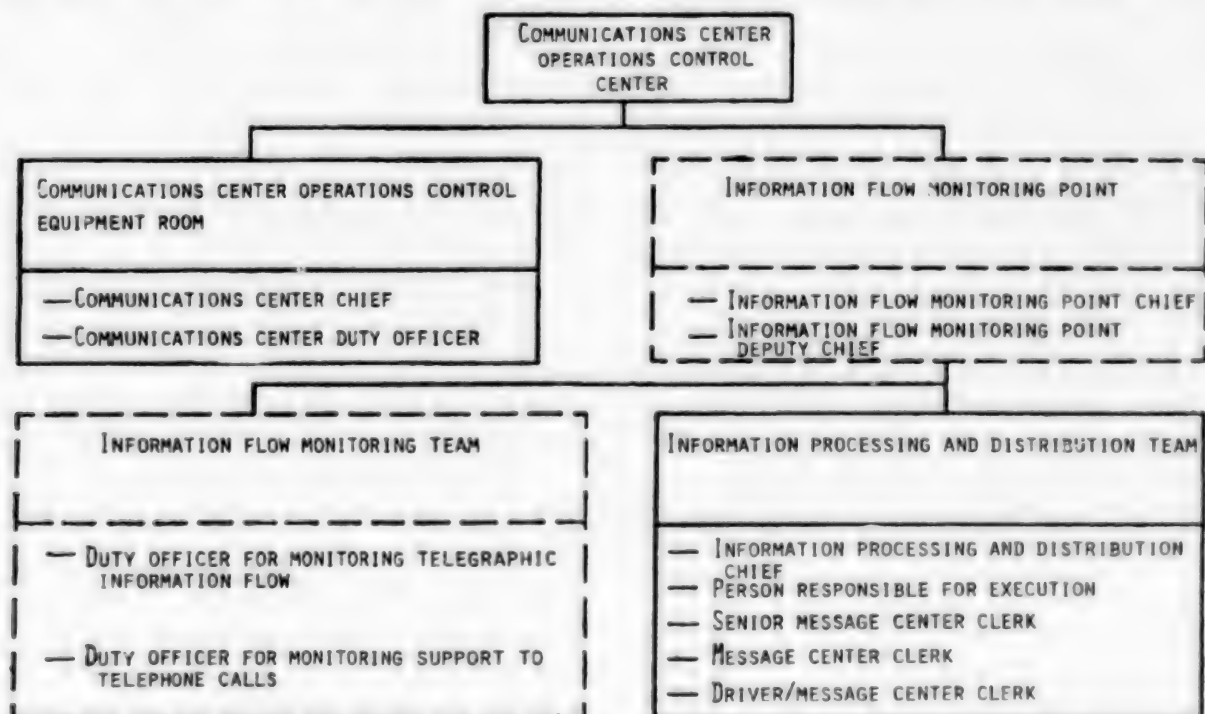


Fig. 1. Proposed structure of information flow monitoring point in a communications center

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duty officer for monitoring support to telephone calls is best prepared in the special long-distance communications telephone station. Service communications equipment present in each equipment room and station should be used for interworking with officers of the duty shift and with combat posts of the communications center.

As a result, monitoring team specialists will be able to see to it that communications specialists promptly process, transmit, receive and deliver messages and that telephone calls are supported within a normative time. In addition, if necessary the officers will take steps to transmit messages via bypass cables or to deliver them using the military postal and courier service.

It should be noted here that with such a T/O&E structure one will succeed in strictly monitoring both the flow of especially important telegraphic messages and the conduct of top-priority and first-priority calls.

In performing combat training missions, assigned personnel of the information flow monitoring point can operate as follows. Let us assume that a priority message has arrived at the communications center. The message center clerk immediately reports to the duty officer for monitoring telegraphic information flow the time it was sent, precedence and address. The officer monitors the message's processing time in the message center, its delivery time to the telegrapher and transmission time to the subscriber (see Fig. 2).

Now let us discuss an example where a privileged subscriber has phoned the telephone station. The telephone operator immediately reports the time the request arrived and the subscriber's priority to the duty officer for monitoring support to calls. Here the officer sees to it that the time for servicing him does not exceed normative (see Fig. 3).

The duty officer for monitoring reports especially important messages to the communications center duty officer and keeps an eye on the delivery time to each addressee through the subscriber's communications center message center.

If a threat of exceeding the normative time for passage of a message arises for any reason, the duty officer takes all steps for its timely delivery to the addressee.

The duty officer for monitoring support to telephone calls also acts similarly in such situations.

But in our opinion, the T/O&E chief of the information processing and distribution team should be charged only with directing the work of the communications center message center, for here there is a very great deal of work with documents.

An information flow monitoring point also may be set up at a fixed-site communications center for the exercise period. Its makeup will be approximately the very same as in a field communications center.

In case the information flow is being monitored without using automation gear, a need arises to outfit work stations of assigned personnel of the information flow monitoring point with service communications equipment. It is advisable to install internal and special communications telephones and a loudspeaker communications station there.

In addition, they must be provided with light (sound) signalling with combat posts of telegraphers and radio-telegraphers who are receiving (transmitting) signals and especially important telegraphic messages.

By having this gear, the duty shift of the point gains the opportunity of adjusting reliable interworking with the communications center operations control center and with other communications center elements which are directly activated for exchanging traffic. But the following should be borne in mind here. Inasmuch as assigned personnel at the information flow monitoring point as a rule are non-T/O&E for the most part, they can perform duties only at one position of the communications center. Consequently they have to be delivered to the other position by means of transportation. While these officers are en route, point leadership will have to be assigned to the chief of the information processing and distribution team.

Further, the duty shift of the information flow monitoring point must maintain logs accounting for the passage of especially important telegraphic information and of top-priority and first-priority calls. The point also must have guidance and reference materials, such as the "Diagram of Existing Telegraph Communications," "Unified Rules for Supporting Telephone Calls" and so on. Of course, it requires much time to log in all incoming traffic, but one cannot get by without this work today. True, means of automation have been used lately at communications centers to speed up the work.

And still, the problem of message processing by message center clerks and their delivery by runners in prescribed time periods remains urgent, for timely receipt of messages by subscribers largely depends on these specialists. This is why they must be selected and trained thoroughly.

In conclusion we will note that the first troop experience in setting up information flow monitoring point control facilities at communications centers already permits drawing certain conclusions now. The important thing is that with their help one succeeds in rather effectively organizing control and taking steps for rapid passage of information both at field as well as fixed-site communications centers.

But specially outfitted equipment rooms are needed for the information flow monitoring point. Specialized computer systems also must find application in them, which will enable automating to the maximum extent the collection and generalization of data on passage of signals and telegraphic messages and information on the load on each link, on its status and on the number of messages not transmitted and delayed.

It would appear that the introduction of such equipment rooms will greatly facilitate the work of assigned communications center personnel, because of whom there is a prompt exchange of all kinds of command and control information. This in turn will increase the functioning efficiency and quality of the communications center as a whole.

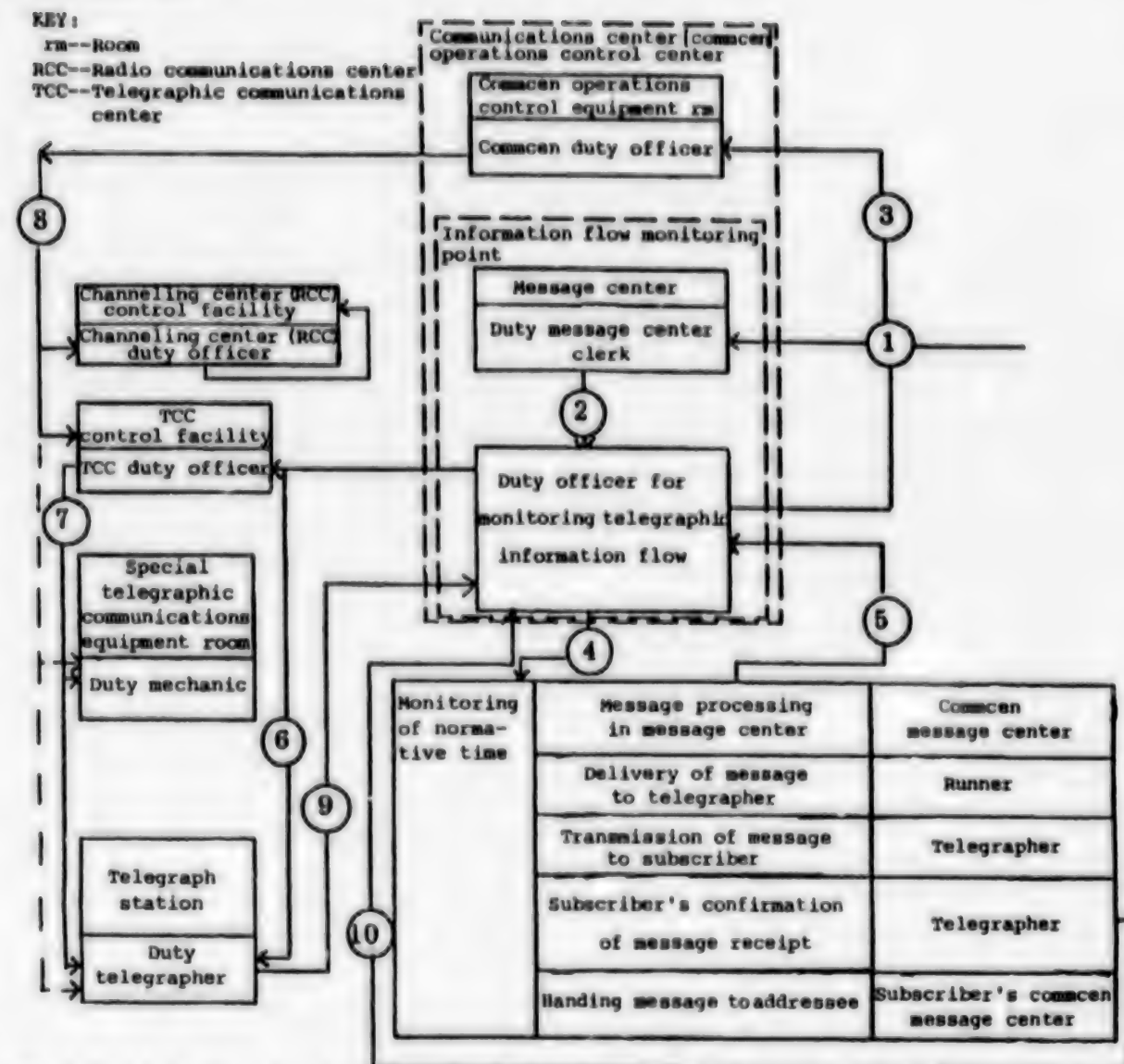


Fig. 2. Model algorithm of work of information flow monitoring point with passage of telegraphic messages through the communications center:

Key:

1. Arrival of message in message center
2. Report on time message sent (or on completion of processing), precedence and address
3. Report on receipt of especially important telegraphic message
 - 3a. Report on possibility of its delay
 - 3b. Report on transmission of message in normative period
4. Phased monitoring of passage of message to addressee
5. Report of message center clerk (runner, telegrapher) about a possible delay of the message and its cause
6. Instructions for ensuring timely passage of message via appropriate assigned personnel (repeat transmission of message, adjustment of channel or shift to reserve channel, transmission of message over other kinds of communications or its delivery to addressee using the military postal and courier service)

7. Same as 6

8. Same as 6

9. Telegrapher's report on transmission of message

10. Normative time of message transmission not exceeded

Note. Communicators' work sequence in transmitting message: in normative period—1-2-3a-4-10(9)-3c; with normative time possibly exceeded—1-2-3a-4-5-6-7-3b-8-9-3c

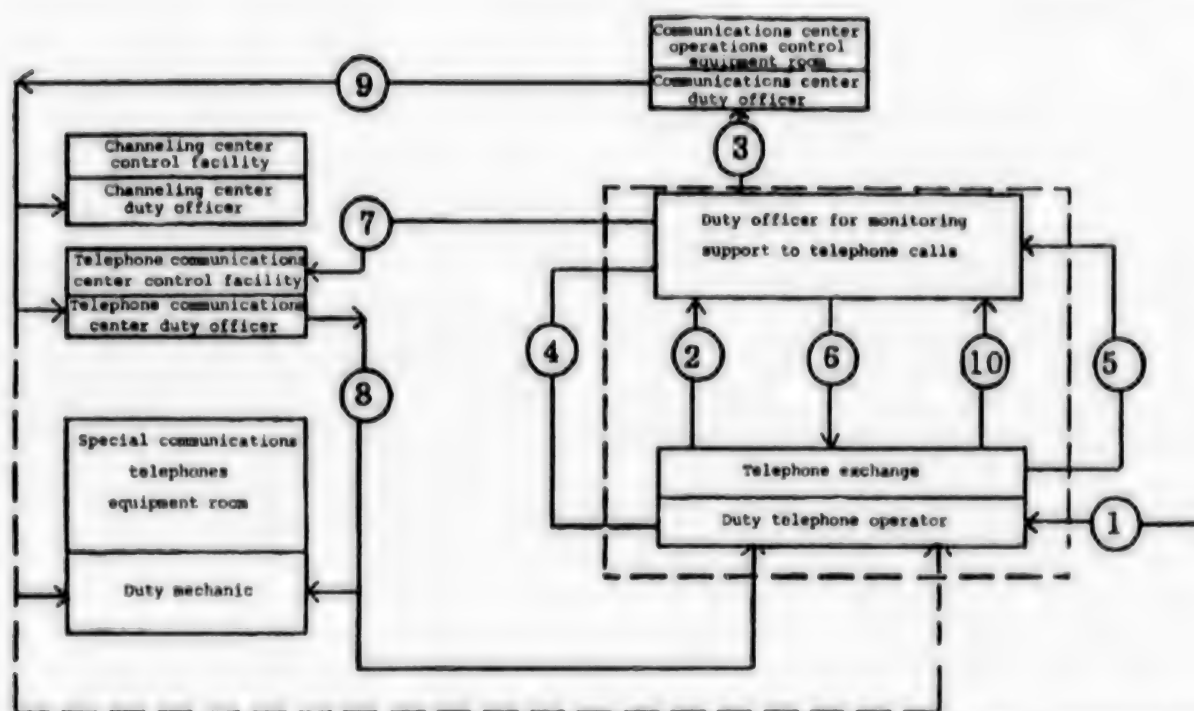


Fig. 3. Model algorithm of work of information flow monitoring point in supporting telephone calls at a communications center:

Key:

1. Arrival of subscriber's request for call
2. Duty telephone operator's report about request
3. Report on supporting especially important calls
- 3a. Report on supporting especially important calls in normative time
- 3b. Report on possible disruption of especially important calls (reasons)
- 3c. Report on support of calls for privileged subscriber (including also with delay of ... minutes)
4. Report on support of calls in normative time
5. Report on possible exceeding of normative time in servicing subscriber
6. Instruction to telephone operator to support calls over bypass channel
7. Report on possible disruption of calls (reasons)
8. Instructions for timely support of calls (over bypass channels, checking and adjustment of channels, transfer of communications to reserve channels)
9. Same as 8
10. Report on support of calls (including with delay of ... minutes)

Note. Sequence of communicators' work in supporting telephone calls: in normative time—1-2-3a-4-3b; with possible exceeding of normative time—1-2-3a-5-6-7-8-3c-9-10-3d

Breaching Enemy Obstacles

94UM0567B Moscow ARMEYSKIY SBORNIK in Russian
No 1, Jul 94 (signed to press 30 Jun 94) pp 44-46

[Article by Colonel (Retired) A. Soskov, candidate of military sciences, docent, former combat engineer company commander, under rubric "For the Victory Semicentennial"]

[Text] As a result of the executed Belorussian Operation, the 1st Belorussian Front right flank moved into an area northeast of Brest in July 1944, which created favorable conditions for troops on the left wing to launch an attack on the Kovel-Lyuboml axis.

The 69th Army was located here by the beginning of the offensive. By mid-July the FEBA [Forward Edge of the Battle Area] in its defense zone ran southwest from Kovel along the Torgovishche, Dolsk, Turichany line and further along the Turya River.

Army Commander Lieutenant General V. Ya. Kolpakchi issued an operation order on 14 July for preparing for the offensive. It instructed that the Army would deliver the main attack on its right flank with forces of 312th and 370th rifle divisions of 91st Rifle Corps (commander Major General F. Volkov) and would break through the enemy defense. Subsequently, expanding the breakthrough

to the south with formations of 25th and 61st rifle corps, it would move to the Zapadnyy Bug River at the state border.

In the middle of May the Germans began preparing a defensive zone, which the fascists called Bufal, on the army's axis of attack. By July it already had been sufficiently strengthened: it had several positions, and the first position consisted of 2-3 trenches.

Units of the enemy 342nd Infantry Division reinforced by several artillery battalions, self-propelled gun batteries and other subunits were defending in the zones of advance of 312th and 370th rifle divisions. There were wire entanglements (barbed-wire concertina and a wire fence) and in places also minefields ahead of the first trench.

Therefore engineer troops had to make passages of 6-8 m to support the penetration of such a line. Two companies of 223rd Combat Engineer Battalion were assigned to perform this mission.

I arrived in 370th Division on the evening of 14 July. Division Engineer Major F. Krylov announced that the company above all had to help the infantry dig sectors of trenches toward the enemy to shorten the distance of the assault dash. Then it was necessary to make 12 passages to move assaulting companies of 1234th Rifle Regiment through.

During six hours of darkness we dug up to 190 running meters of trenches, each "whisker" approximately 20-30 m long toward the enemy in the direction of the future penetration. For the next 24 hours and during the day on 17 July we prepared to make the passages. During this time we carefully studied approaches to obstacles, updated passage sites with the commander of 1234th Rifle Regiment, and came to an agreement about fire cover of the combat engineers' actions.

On the right flank of the breakthrough sector the fascists had not yet managed to stretch wire; only posts were standing. On the other hand, in the center and on the left there was a continuous wire entanglement, primarily in the form of concertina. Therefore we began preparing eight breaching teams (one team per passage) and decided to check out and mark four passages where there was no wire. In addition, we set up two reserve teams. Each team consisted of four persons and was headed by a squad commander.

We prepared a training area 3 km from the FEBA behind the village of Rastov, where we trained the people. Precise actions were demanded of each private and sergeant in moving across no-man's-land (and this was around 250-300 m) and cutting the wire with cutters. And everything had to be done silently in a prone position so the enemy did not hear or see us.

The evening of 17 July arrived. The company assembled in the first trench opposite the Volchitsa terrain feature and somewhat to the north. Breaching teams took up an initial position. Platoon commanders rechecked personal gear and equipment and the presence and readiness of breaching equipment.

On the day before and on this night the enemy was nervous; he frequently fired illumination flares and conducted machinegun fire. Guns and mortars often fired

against the depth of battle formations of the division, which was poised for the attack. On the night of 16/17 July alone the enemy fired more than 280 artillery and mortar rounds and illuminated terrain from eight posts in the 370th Rifle Division zone.

At my command, given through platoon commanders Technician-Lieutenant A. Zavadskiy and lieutenants A. Bondarenko and G. Kurchatov, the teams began moving in a leopard crawl. Ahead was a combat engineer with mine detector, behind him two persons with probes and cutters, and the team leader brought up the rear. He directed the combat engineers' actions, saw to it that they did not stray from the indicated direction, and kept a lookout for the enemy. The firing of illumination flares, when it was necessary to freeze in a prone position, was the most unpleasant.

On reaching the obstacles, two combat engineers cautiously cut the concertina in two places and attached a cord to one end of the cut-out sector. At this time the third person was digging a foxhole for a traffic control post at the passage.

Time went quickly and the teams began returning with reports about what had been done. Suddenly there was a surprise. Mines were discovered beneath the wire in two passages. It was impossible to clear them at night under these conditions. There was one solution—breach the passages with an explosion. Linear explosive charges were prepared in the reserve teams.

I gave the command for the reserve teams to prepare to move out and went with them myself, since little darkness remained and the mission was important. Drenched in sweat, we crawled up to the passage sites. We succeeded in shoving the charges beneath the wire fence in some manner without revealing ourselves. We checked the laying of charges and readiness of safety fuze detonator sets and returned to the first trench.

Artillery preparation began at dawn. Under its cover we detonated the charges and dragged apart the cut sectors of concertina where we could. The infantry initiated the assault. Two combat engineers ran up to each passage in the first ranks of infantry. They helped drag apart the cut sectors of wire entanglement where this had not managed to be done from the trenches. Some, caught up by the heat of battle, burst into the first enemy trench together with the infantrymen.

The article "Comrade Engineer Ryabov" was contained in the 370th Rifle Division newspaper ZA SOVETSKUYU RODINU of 28 July 1944. It told how combat engineer Private 1st Class Ryabov made a passage in enemy obstacles at night together with comrades and led the infantry to this passage during the day. Ryabov burst into the German trench together with the riflemen. An enormous German pounced upon the private 1st class. Ryabov did not lose his head. In a single instant he plunged the point of a mine probe into the German, who slumped to the ground. And the combat engineer hero already was running further along the trench, clearing it of the enemy together with his comrades. Ryabov was decorated with the Order of Glory 3rd Class...

Sergeant G. Serbin skillfully directed the actions of one of the teams. He was first to dash into a breached passage,

bringing the infantry behind him. In the enemy trench he had to enter into single combat with a German NCO. Wrestling the pistol from him, Serbin shot the fascist. The brave soldier also was decorated with the Order of Glory 3rd Class.

Sergeant N. Dudenko, a breaching team leader, precisely directed the combat engineers' actions. During artillery preparation he reached the passage at a dash, pulled aside the cut sector of concertina, and together with the infantry burst into the first and then also the second enemy trench. Dudenko was decorated with the Order of Patriotic War 2nd Class for brave, skillful actions.

The citation for award of the Order of Patriotic War 2nd Class to Technician-Lieutenant A. G. Zavadskiy stated that, being with the teams at the wire entanglement, the officer personally directed their actions. These teams were first to breach passages successfully and give help to neighbors.

The main result of actions by company personnel was the fact that the assaulting infantry surmounted the enemy FEBA without losses through passages breached in the obstacles. A total of 22 privates and sergeants and all four officers in the company were decorated for successful performance of this mission.

Unfortunately, it also was not without losses. While at the FEBA from 15 through 18 July, Private 1st Class I. Mandrykin perished from enemy artillery fire, Junior Sergeant M. Volchikov and Private Ya. Manuylov were wounded, Sergeant S. Gurov, Private P. Vashchenko, Technician-Lieutenant Zavadskiy and the former commander of the combat engineer company who is writing these lines received concussions.

...The offensive by 69th Army formations and units developed successfully. Repelling enemy counterattacks and destroying personnel and combat equipment, 1234th Rifle Regiment (commander Lieutenant Colonel I. Levintsev), which was advancing in the first echelon of 370th Rifle Division, already was fighting for Perevaly by 1400 hours on 18 July, and regiments of 312th Rifle Division had approached the enemy third position.

By day's end the 1081st, 1079th and 1083rd rifle regiments of 312th Rifle Division and the 1234th and 1230th rifle regiments of 370th Rifle Division had taken Osereby and Okhotniki and had approached the eastern border of Lyuboml'skiy Rayon.

By the end of the second day of the offensive all three corps of 69th Army had moved to the Zapadnyy Bug River, completing the liberation of Soviet soil from the occupiers on this axis.

During the offensive the combat engineers' missions did not diminish. As before, the most important one remained reconnaissance, mineclearing and restoration of roads and bridges. And where the brave combat engineers passed, soldiers of other combat arms moved unhindered. In just two days of the offensive toward the Zapadnyy Bug in the 370th Rifle Division zone, combat engineers of the division and of our company prepared and built anew 12 bridges, laid a division route, and removed more than 1,000 antitank mines and around 800 antipersonnel mines.

By order of the Supreme Commander, a salute from 224 guns was fired in 20 artillery volleys on 20 July in honor of successful operations of 1st Belorussian Front troops in breaking through the enemy defense in the vicinity of Kovel.

The Motherland also evaluated actions of personnel of 37th Army Combat Engineer Brigade on their merits by awarding it the Order of Red Banner. The 370th Rifle Division also received the very same award.

Armor for Infantry

94UM0567C Moscow ARMEYSKIY SBORNIK in Russian
No 1, Jul 94 (signed to press 30 Jun 94) pp 51-53

[Article by Lieutenant Colonel S. Roshchin under rubric "Study. Operation"]

[Text] The mobility and degree of protection of infantry operating on the battlefield with tank support increased substantially when the BMP-3 became operational. This fighting vehicle became a quality leap in development of this class of Russian equipment. It convincingly proved its superiority over British and U.S. vehicles of similar purpose during tests in the Arabian Desert.

For this the BMP-3 had to cross the desert's inland sand dunes for many hours in 60 degree heat, move at top speed over dirt roads for 16-17 hours a day for three days, and in conclusion fulfill a complicated program of firing all kinds of weapons to various ranges against unfamiliar targets. All missions were worked simply brilliantly. The vehicle demonstrated superb riding qualities (trafficability over sands and salt flats, high speed, long range and reliability) as well as excellent fire capabilities.

The BMP-3 is a qualitatively new vehicle (see table and color insert [color insert not reproduced]) that differs fundamentally from its predecessors, the BMP-1 and BMP-2. Its hull contains four compartments: driving, fighting, assault and engine-transmission. The driving compartment is located in the hull nose, where three work stations are outfitted: driver's in the middle and for assault machinegunners to his right and left.

The fighting compartment with places for the commander and gunner-operator is located in the middle section of the hull. The main weapon system is installed in the turret. The gun's unit of fire is contained in mechanized ammunition stowage under a rotating floor. The weapon control system includes a sight/guidance unit, a sight for firing against ground and airborne targets, a combination (day and night) vision device, and a ballistic computer. A device with a fiber-optic system for displaying the aiming mark has been used for the first time for machineguns installed in autonomous nose mounts. The main armament is stabilized in two planes. There also are devices for terrain orientation. The commander's place is outfitted with an R-173 radio transmitter and R-173P radio receiver.

The assault compartment is behind the fighting compartment and has seven seats, two individual ones and five on a common seat by the engine bulkhead. Air lines are installed here to supply uncontaminated air to assault personnel, and there also are boxes for the store of dry rations and for spare parts, instruments and accessories. Ports covered by armored covers are accommodated in the sides for conducting fire with organic small arms.

There are three hatches in the front section and another two on the turret roof for entrance and exit of the crew and assault force. There are wide double doors in the stern and long folding covers in the upper part of the hull. The engine-transmission compartment is behind the assault compartment. It is isolated from manned

compartments by a heat and sound insulating bulkhead. It contains engine, assemblies and power transmission units as well as the systems serving them. There is convenient access to the engine and to transmission units because of the presence of wide-opening or easily removable hatches and covers.

BMP-3 Technical Characteristics

Complete combat weight, tonnes	18.7±2%
Combat team:	
Crew	3
Assault force	7
Maximum speed, km/hr:	
Highway forward (backward)	70(20)
Afloat	10
Highway range, km	600
Armament	2A70 100-mm gun-launcher, 2A72 30-mm automatic gun; PKT 7.62-mm machinegun (3)
Sustained rate of fire from 2A70, rounds/min	10
Cyclic rate from 2A72 (at least), rounds/min	300
Maximum range of fire, m:	
2A70 (artillery round)	4,000
2A72	4,000
Arcs of fire, degrees:	
Horizontal	360
Vertical	From -6 to +60
Unit of fire:	
Rounds for 100-mm gun	40
Rounds for 30-mm gun:	
With fragmentation-tracer and HE-fragmentation-incendiary projectiles	305
With armor-piercing tracer rounds	195
ATGM	8
Rounds for machineguns (in belts)	6,000

The vehicle running gear has six road wheels with track support rollers. The road wheels are double, with external shock absorption in the form of solid rubber masses. The suspension is individual and hydropneumatic, with large dynamic movement of the road wheel. Because of this design, a smooth track flow over road irregularities at any speeds managed to be achieved without the vehicle jumping or swaying. The running gear and chassis suspension have a large safety margin which permits using it as a base for fighting vehicles for various purposes. Movement afloat is supported with the help of water jets driven from the transmission.

But as with any vehicle, damages and breakdowns are possible in the BMP-3, which is operated basically off roads. Therefore it is important that crews themselves can remedy them under field conditions by using the carried tool kit. In particular, a situation may arise where it is necessary to replace a road wheel. This is especially difficult to do when there is a damaged mechanism for

changing vehicle road clearance, or when a strut is used instead of the road clearance changing mechanism. The instruction and the booklet on operating the BMP-3 do not describe operations to be performed in this case. Therefore it appears advisable to tell about experience in such work gained in one of the units.

Let us begin with the road wheel. In the course of vehicle operation tear-outs and chipping inevitably form on the road wheel's rubber tires due to loosening of bolts fastening the guide lugs, because foreign objects get in and because of poor stability of the track in the loop [obvod]. The use of wheels with tear-outs and chipping of any size is permissible if a continuous band around the entire perimeter at least half the width of the rubber mass remains undamaged. Otherwise the wheel is replaced entirely or the damaged disk only is replaced. If there is no opportunity to replace the wheel immediately with both tires destroyed on the first, second or third road wheels, it is necessary to remove the hydraulic shock absorber so it

does not malfunction due to a break in the rod. With a significant different in wear or damage of the rubber masses, it is permissible to exchange places of the fourth, fifth and sixth road wheels with the first, second and third ones.

The road wheels are adjusted when replacing a disk with consideration of flange wear of the disk that has malfunctioned. In changing the inner disk, it is necessary to remove the shims between the end of the hub and the inner disk (their thickness equals the amount of wear of the flange) and place them between the outer and inner disk.

In replacing the outer disk, shims of a thickness equal to the amount of wear of the disk being replaced are positioned between the outer and inner disk. In changing a road wheel as a whole or its half-disk, place the vehicle on a level area with firm soil or cover. Loosen the tie bolts of the damaged road wheel's half-disks. Then, using the track tensioning mechanism, loosen the tension of the appropriate track to 2.94 MPa (30 kg(f)/cm²) on a manometer. Place the MAL.RABOCHIY BOLSHOY switch in the BOLSHOY position for the appropriate group of road wheels (or the damaged road wheel) and switch on the VKL.TsIKLA toggle. After changing the road clearance, place a prop 450-500 mm high under the nose or stern on the side that is raised. Then shift the MAL.RABOCHIY BOLSHOY switch to the MAL. position and switch on the VKL.TsIKLA toggle. The necessary group of road wheels will be suspended for replacement of the damaged road wheel without taking apart the track.

Loosen the bolts fastening the hub inner cover 3-4 turns, remove the lock washer and cover from the road wheel hub, bend off the tab washer, unscrew the nut fastening the hub and remove the road wheel. Install the new road wheel in the reverse sequence after first selecting shims of necessary width. After this remove the prop and tension the track.

To replace a road wheel or a road wheel's half-disks when there is a damaged road clearance changing mechanism or when a strut is used in its place, also place the vehicle on a level area. Then hook the self-extraction line to the support arm and its ends to the upper run of the track. Move the vehicle forward 50-60 cm. As the line tightens turn the support arm, and the road wheel raises a little by the amount of the flange. The road wheel or half-disk is replaced in the sequence set forth above.

In the process of operating the BMP-3, a shear in flanges of the idler wheel inner (outer) half-disk hub is possible due to improper adjustment of road wheels. In this case it is necessary to put on new half-disks or a new idler wheel. To replace a half-disk place the vehicle on a level area and take the track apart between the idler wheel and first road wheel. Then remove the track and adjust the road wheels. Replace the destroyed half-disk and, if there is play in tie bolt seats or a bearing failure, replace the wheel as a whole.

Removal of the idler wheel hub from the crank (or its installation) is similar to removal (installation) of the road

wheel hub. Experience has shown that if there is no opportunity to replace a destroyed driving sprocket for a new one, it is possible to use a road wheel in place of an idler wheel. For this it is necessary to replace the driving sprocket as a whole for a road wheel or to remove the driving sprocket half-disks and the thick shim from the hub and install road wheel half-disks on it (the track should be lengthened by one track link without fail).

To avoid expansion of openings of half-disks both of the driving sprocket as well as of road wheels, it is necessary to tighten tie bolt nuts every 1,000 km with a force of 441 ± 49 N (45 ± 5 kg(f)) on a 1 m arm. A vehicle can travel more than 4,000 km with a road wheel in place of a driving sprocket. We will note that the proposed methods of remedying malfunctions under field conditions have been tested in the course of operations and permit restoring the working capacity of tracked propulsion rather quickly.

Fragmentation Hand Grenades

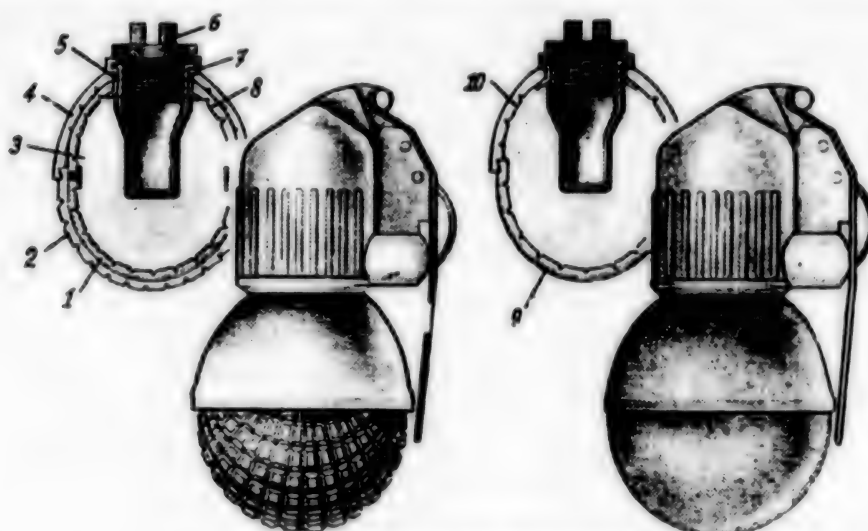
94UM0567D Moscow ARMEYSKIY SBORNIK in Russian
No 1, Jul 94 (signed to press 30 Jun 94) pp 57-58

[Article by Major S. Samoylyuk under rubric "Study. Operation"]

[Text] Antipersonnel fragmentation hand grenades are used to engage enemy personnel in close combat both in an assault as well as in the defense. Grenades are divided into offensive (RGD-5, RG-42, RGN) and defensive (F-1, RGO) depending on the size of the effective fragmentation pattern. This parameter has increased significantly for new grenades (RGN, RGO) (see table). The basic parts of grenades are the body with tube for the igniter set, a burster charge and the igniter set. The RGD-5, RG-42 and F-1 hand grenades are fitted with a modernized igniter set (UZRGM). The igniter set detonator ignites at the moment the grenade is thrown and it explodes in 3.2-4.2 seconds. The steel body of the RGD-5 includes upper and lower parts. The upper part consists of a cap and cap insert. The lower part consists of a sabot and sabot insert. The igniter set tube, which provides a seal for the burster charge in the body, is connected to the upper part with the help of a lip-type seal. A plastic plug protects the tube from contamination. In preparing the grenade for a toss, the igniter set is screwed in in place of the plug. There are similar tubes for the igniter set in the RG-42 and F-1 grenades. The burster charge is for fragmenting the grenade. The UZRGM, consisting of a striker mechanism and the igniter set proper, initiates detonation of the charge filling the body. The striker mechanism acts directly on the igniter set cap. The basic parts of the striker mechanism are the striker and striker spring. Flame is transmitted from the igniter set cap through the delay element to the igniter. The body of the RG-42 grenade contains a burster charge and fragmentation liner folded in 3-4 layers. The surface of the liner is incised to increase the number of fragments. The cast iron body of the F-1 grenade has longitudinal and transverse grooves. The grenade usually fragments along them.

Specifications and Performance Characteristics

Indicators	Offensive			Defensive	
	RGN	RGD-5	RG-42	RGO	F-1
Weight of grenade with igniter set, kg	0.31	0.38	0.42	0.53	0.61
Weight of igniter set, kg	0.08	0.07	0.07	0.08	0.07
Type of explosive	A-IX-1	T	A-IX-1	A-IX-1	T
Adjusted fragmentation effect area, m ²	90	30	30	200	80
Type of igniter set	Impact-time	Time	Time	Impact-time	Time
Time of action (self-destruction) of igniter set, sec	3.3-4.3	3.2-4.2	3.2-4.2	3.3-4.3	3.2-4.2
Reliability of action in striking soil of average hardness, at least	0.8	-	-	0.8	-



Figs. 1 and 2. RGO and RGN hand grenades

Key:

1. Lower inner hemisphere
2. Lower outer hemisphere
3. Explosive mixture
4. Upper outer hemisphere
5. Sleeves

6. Plug
7. Lip-type seal
8. Upper inner hemisphere
9. Lower hemisphere
10. Upper inner hemisphere

The new RGN and RGO grenades have certain design features. They use a more powerful burster charger. The RGN consists of two hemispheres made of aluminum alloy 4 mm thick. The body of the RGO has two outer and two inner steel hemispheres 2.8 mm thick to increase the number of lethal fragments. Inner incisions are made on the bodies of both grenades and outer incisions only on the surface of the lower hemisphere of the RGO. This permits distinguishing it by external appearance from the offensive grenade (RGN). A threaded sleeve for screwing in the igniter set is flared out in the upper part of the bodies of the

RGN and RGO grenades with the help of lip-type seals. To avoid contaminating the sleeve in the process of transporting and storing grenades, a plug is inserted or screwed into it. The RGN and RGO have an identical igniter set (called an impact-time igniter set) and burster charge. The igniter set consists of a polyethylene body containing the safety and arming mechanisms and the self-destruct mechanism. In addition, there is a striker mechanism, which is a feature of these grenades. It provides for the grenade's detonation when it impacts an obstacle. This increases the likelihood of engaging the enemy.

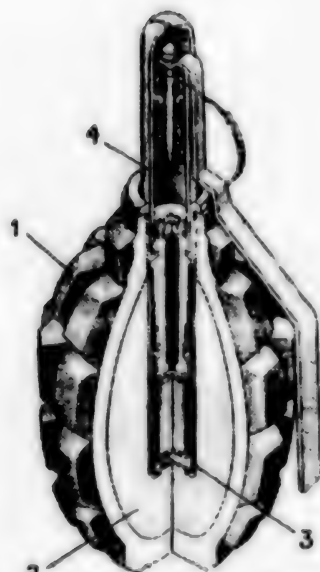


Fig. 3. F-1 hand grenade:

Key:

- 1. Body
- 2. Burster charge
- 3. Tube
- 4. Igniter set

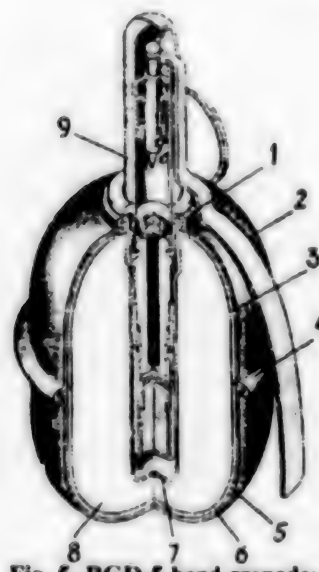


Fig. 5. RGD-5 hand grenade:

Key:

- 1. Lip-type seal
- 2. Cap
- 3. Cap insert
- 4. Body
- 5. Sabot insert
- 6. Sabot
- 7. Tube
- 8. Burster charge
- 9. Igniter set

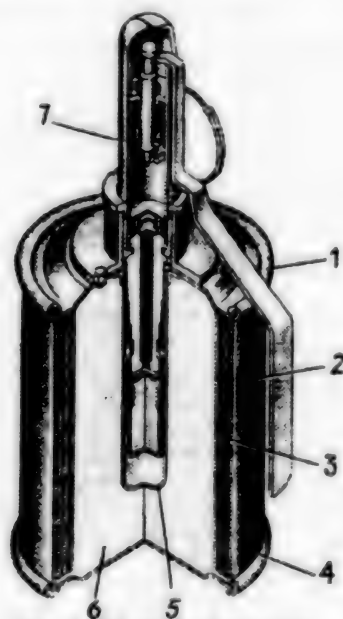


Fig. 4. RG-42 hand grenade:

Key:

- 1. Cover
- 2. Body
- 3. Fragmentation liner
- 4. Base
- 5. Tube
- 6. Burster charge
- 7. Igniter set

Preserve Professional Cadres

94UM0567E Moscow ARMEYSKIY SBORNIK in Russian
No 1, Jul 94 (signed to press 30 Jun 94) pp 60-63

[Article by Colonel A. Shmakov, candidate of technical sciences]

[Text] Today the Russian Army is being reduced to the minimum permissible numerical strength, but faculties of military higher educational institutions also are being reduced along with it, and this fact causes alarm.

How many words were spoken about the problem of improving the quality of professional training of military educational institution instructors, and in particular that it was impermissible to discharge 45-year-old officer instructors to the reserve! It would have appeared that this question would be resolved finally, once and for all, especially as back in December 1992 it was said at the All-Services Conference of Leadership Personnel of Russian Federation Ministry of Defense Military Educational Institutions that any school is strong above all in its permanent cadres, the instructors. And it was emphasized especially that military education today largely is insufficiently effective since it is not oriented toward the future.

And what happened? The Law "On Military Obligation and Military Service" was adopted soon after such a

representative assembly, in accordance with which maximum terms of service were established: 45 years for majors and lieutenant colonels and 50 years for colonels.

Is this really the state way, to approach everyone with the same yardstick?! One can agree that it is no longer simple at that age for troop officers to perform alert duty, participate in exercises and disappear on the range for days on end. But for an instructor who has rather specific work and whose physical and mental loads are incommensurably less, this limit can be shoved back for another 5-10 years.

The fact is that at age 45 an instructor is just taking shape as a genuine pedagogue, grown wise with experience and knowledge and possessing methods expertise to perfection. It is at this time that the learned man is born, figuratively speaking. And so what then? Discharge? It is clear to any person of good sense that this will bring only harm to the military education system and will have a negative effect on quality of training military cadres. So as not to make unsubstantiated statements, I will cite the Chelyabinsk Higher Military Automobile Engineering School as an example.

The presence of qualified instructors from among officers has remained the problem of problems here for a long time now. There are extremely few of them and up to now many vacant positions have not been filled. But alas, even among those who work in the pedagogic field today there are many who have reached the maximum term of service in age.

Why is there a shortage of pedagogues in the school? Above all because the country lacks a system for training instructors, and also things are thoroughly bad with providing military higher educational institutions with academy graduates who have pedagogic training. Suffice it to say that the Chelyabinsk Higher Military Automobile Engineering School's requirement for pedagogues is satisfied by no more than 30 percent annually.

In addition, the school lacks scientific-pedagogic cadres of the highest qualification. Today the positions to which instructors with an academic degree should be appointed are only 25 percent filled.

And finally, one cannot forget a factor such as the transient nature of officers' instructor activity, for as a rule they come into the school from the troops at age 40, but when they are just about to receive the right to be called pedagogues, they are discharged to the reserve. This is why five professor positions and four chair docent positions have remained vacant in the school for a long time now. Alas, there are no candidates. And where are they to be gotten if only two officers in the school have over ten years of instructor service?

I am ashamed to say it, but only 34 percent of instructors have more than five years of instructor service. And unfortunately the prospects are not comforting. With personnel entities' conscientious fulfillment of the established procedure for discharging officers, 30 percent of instructor positions will be vacant in the next 2-3 years. And those remaining here will not be able to take on themselves the additional hours and other additional loads. Even so, an extra load fell on their shoulders in the form of performance of routine garrison duty, mobilization work, operational missions of the command element and so on.

It is apropos to ask the question: For whom is this advantageous? Perhaps for the Ministry of Defense, which today has a catastrophic money shortage? I am convinced that it is not. The most elementary calculation indicates that the sum of the pension being received by an instructor discharged to the reserve and of the wage for the position considerably exceeds the amount of pay of an officer-instructor in the rank of lieutenant colonel.

Then perhaps this is advantageous for instructors discharged to the reserve? Of course not, since there are few nonofficer positions in chairs and those have been filled for a long time. Therefore from the standpoint of economic expediency it is not advantageous for the Ministry of Defense to discharge officer-instructors to the reserve at age 45-50. And with respect to their health and physical condition, allegedly already insufficient for military service, this argument too does not stand up to criticism.

In our school there are many 45-year-old lieutenant colonels who take an active part in sports activities and surpass junior officers in strength and endurance. Among them are instructors N. Doroshenko, A. Donskoy, S. Antipov and others, who this year are to be discharged to the reserve.

Summing up what has been said, one can state confidently that discharging officer-instructors because of so-called maximum age is extremely wasteful. And this is not advantageous for the state or for the Russian higher military school or for the Ministry of Defense. That means there is one solution: the maximum term of service of officer-instructors must be increased by a representation of Academic Councils of higher educational institutions.

For now, though, we not only are losing an enormous detachment of military pedagogues, but we also are losing in the quality of specialists coming into the troops today. As a result the higher military school is losing its authority, and this is impermissible.

Forge of Managers and Generals

94UM0567F Moscow ARMEYSKIY SBORNIK in Russian
No 1, Jul 94 (signed to press 30 Jun 94) p 64

[Article by Colonel O. Sedykh]

[Text] The Volsk Higher Military Rear Services School was 30 years old in July of this year. At first glance it is not that considerable an age. There are higher educational institutions whose biography and traditions are considerably richer. But here is a typical fact: despite the relative youth of the military educational institution, its alumni today hold leading posts in the Armed Forces logistic support system. Among the higher educational institution's graduates is the chief of Russian Army Rear Services, chiefs of the Main Trade Directorate, Central Food Directorate and Central Clothing Directorate, chiefs of rear services of the Ground Troops, Air Defense Troops and Airborne Troops, and many leaders of rear entities at the district level.

The school is unique in many ways. As rear services personnel joke, one might as well enter it in the "Guinness Book of Records." In numbers of cadets it probably is the largest not only in the country, but also abroad, and evidently also largest in territory occupied. It takes a half-day to make the rounds of it.

The military educational institution also is among record holders in the number of university entrants. Eight to nine persons per slot—this figure surprises no one here. Of course, good prospects for graduates' service and work play not the least role. By training in the "management" specialty, cadets are sure they always will find a worthy place both in the Army and in civilian life.

The conditions under which the future officers live and learn are a factor of no small importance in the prestige of the higher educational institution. Without stretching it at all, I will undertake to assert that they have everything necessary for successful study. Above all these are the production training complexes, where it is possible to master practically all duties performed by rear services specialists in day-to-day work. For example, in the food service production training complex, which includes a complex for vegetable storage and processing, messhalls, and an experimental training subsidiary farm, cadets undergo practice as storekeeper, laboratory assistant, cook, clerk and messhall chief without traveling to the troops.

By the way, these complexes are not just training facilities, but also a kind of proving ground at which future officers "break in" troop support innovations. For example, in the near future that same food service production training complex will be augmented by a production training mess establishment without analogues in the Armed Forces. Karusel, the latest food distribution system, and an automated dish collection and washing line will be set up in it. It is planned to computerize the choice of food dishes and bookkeeping formalization of the movement of food products from depot to messhall.

People at the higher educational institution also are rightly proud of the recently created cable television studio. Even now the school television center is capable of simultaneously supporting essentially all chairs with television clips. Video information also goes to auditoriums, services and subunits.

Still, one of the main achievements is the organization of off-duty routine of officers and cadets. Here, as everywhere, they experience an acute shortage of funds. Despite the difficulties, however, they not only did not curtail development of the social sphere, but even took a resolute step forward in constructing housing and creating a strong food base.

I am sure that many of the readers know from their own experience what incredible labors it sometimes costs an officer to "dislodge" a plot of land for himself. But at the Volsk Rear Services School everyone who wishes to has an opportunity to receive not one but three whole plots: one for a little house with garden, one for a kitchen-garden and even one for a melon patch. People at the military educational institution also are concerned for those in whom a craving for land still has not awakened. Everyone who wishes can purchase the necessary farm products from school granaries for very symbolic prices. And as I saw personally, the granaries are very rich.

The school's subsidiary farm is indicative in this regard. The stock of animals grows here from year to year. With completion of construction of stock-raising farms, the military educational institution will be able to fully supply

itself with milk and eggs, and in the near future also with meat for a half-year.

Things also are progressing successfully with housing construction. Not long ago a residence of 78 apartments was placed in operation and another three have been started. One will contain a consumer services center with tailor shop, barbershop and rental point. The idea of building individual houses, each for one family with personal plot, also has gained clear prospects.

When the rears are reliably covered, as they say, there is an opportunity to pay more attention to intensifying the training process, strengthening military discipline and developing mass sports work. And it is not by chance that the military educational institution is the best one in the Volga Military District and holds the Volga Military District Military Council Challenge Banner for the second year in a row. The school also is renowned for sports achievements. Combined teams of the military educational institution in officer triathlons, hand-to-hand combat, volleyball, soccer and skiing have become district champions. And a victory in extramural competitions in applied military swimming for the KRASNAYA ZVEZDA prize was celebrated here recently.

Behind all achievements of the military educational institution, large and small, lies the strenuous work of cadets and their educators. I would like to note especially among the mentors of future officers School Commandant Major General Ye. Gromov, colonels A. Shesterikov and M. Dubrovskiy, lieutenant colonels N. Dmitriyev and S. Mukhoyed, majors V. Stafeyev and M. Antonik, and Russian Army employees T. Shevelev and L. Zryachkin. It was largely thanks to their professional expertise that the higher educational institution greeted its 30th anniversary with the reputation of one of the best Armed Forces military educational institutions.

The Mars Complexes

94UM0567G Moscow ARMEYSKIY SBORNIK in Russian No 1, Jul 94 (signed to press 30 Jun 94) pp 65-66

[Article by S. Umanskiy, former Deputy General Designer of Zvezda Scientific Production Association, under rubric "Space Launch Facility: Rockets and People"]

[Text] The more we know about the Red Planet, the stronger it occupies our imagination, but unfortunately we know quite little. Is there life on it? Some studies permit answering in the positive and others in the negative. Is there water? Some scientists believe there is, in the form of ice. In that case Mars may become an intermediate base in our space flights, since from "local" water it is possible to obtain oxygen and hydrogen, an oxidizer and a fuel.

Our country is working to create automatic space stations for studying Mars. Just what kind of craft are these and what are the plans for their use?

Using the laws of J. Kepler, it is possible to determine the flight time of a spacecraft to Mars. For example, with a departure from Earth at a speed of 11.57 km/sec it will reach the planet in 259 days, but if the speed is 11.8 km/sec, the craft will approach Mars in 165 days. With acceleration to 16.7 km/sec (the solar escape velocity), 70 days will be needed for such an operation.

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For the return to Earth it is necessary to calculate the return flight trajectory. Thus, if a craft makes a landing on Mars in 259 days and immediately sets off on the return trip, then having approached an Earth orbit in the very same amount of time, it will not rendezvous with Earth, since the latter already will be in another place. The craft must spend 450 days on Mars in order for the rendezvous to take place. Thus, the flight to both ends will take 968 days. With an increased flight speed, the period of forced presence on Mars is reduced. Thus, with a departure speed of 16.7 km/sec it can be 12 days and the entire journey will last 152 days.

Russian scientists and specialists are working to realize a future program for studying Mars. It is planned to carry out its next phase this year. The Mars-94 automatic space complex being sent to the Red Planet is to be launched from Baykonur on a Proton booster rocket with the DM boost module on 21 October. After Mars-94 is inserted into an Earth orbit, the station will transfer to an interplanetary flight trajectory lasting 315 days. The Mars-Earth distance will be 310 million km.

The interplanetary complex includes an orbital station (weight 800 kg) for lengthy research of the planet, two penetrator probes (65 kg each) dropped to the surface for studying the physical-chemical properties of soil, and two small automatic stations (50 kg each). The launch weight of Mars-94 is 6,580 kg. The spacecraft is equipped with an autonomous propulsion system, used to increase speed, correct trajectory and decelerate. The fuel reserve is 3,200 kg. The small stations are separated 3-5 days before the approach to Mars, and the penetrators are separated after the complex enters an orbit as an artificial satellite of Mars.

Using the orbital station, it is planned to perform a series of remote studies of the planet, including a television survey and infrared and radar mapping, and to study its surface by infrared spectroscopy and gamma-spectroscopy methods. It is also planned to collect information about the upper atmosphere, ionosphere and magnetosphere. The station is to move around Mars in an elongated orbit with perigee of 200-700 km and orbital period of 12 hours. The time period of active existence is at least one year.

Global dust storms are repeated periodically on Mars, and so the television cameras will be used to determine characteristics of dust cloud development. Regular measurements of magnetic and electrical fields probably will permit answering questions about the presence of Mars' own magnetic field and about the nature of interaction of the solar wind with the planet's magnetosphere. Research gear is accommodated on a manipulator platform, which ensures directing and stabilizing optical devices with an accuracy of around 4 seconds of arc. A long-wave radar will permit subsurface research to determine the presence, depth of occurrence and geographic distribution of ice-containing rocks and to assess dielectric parameters of soil.

After landing, the small automatic stations should function for around 700 days, during which time the atmosphere and climate of Mars, element composition of the surface (using the alpha-spectrometer), magnetic fields and seismic conditions will be studied. Parameters of the atmosphere's vertical structure will be determined from direct measurements during the descent.

The aerodynamic shape of the small stations was chosen so as to ensure unequivocally oriented movement and deceleration in the atmosphere of Mars after their separation from the complex. When given conditions of descent are reached, a parachute system with a canopy area of 50 m² deploys. Then a shock-absorbing device (within which the station is located) consisting of two interlaced, inflatable envelopes is deployed. The sustained rate of descent is 20-27 m/sec. Results of scientific measurements by the small stations are transmitted to the orbital station and from there to Earth.

The shape of the penetrators resembles a nail with a conical head. They rush toward Mars one after the other after the solid-propellant retrorockets operate. An envelope of special shape is inflated around each penetrator before entry into the atmosphere. Because of aerodynamic drag, it ensures a given speed of collision with the surface of the planet. At the moment of impact a shock-absorbing system functions which reduces g-loads to design loads and ensures separation of the penetrator into two parts—one penetrating to a depth of 4-6 m, and a tail section, which remains in the surface layer. After the landing a television camera antenna is extended and collection of scientific data begins. The data are transmitted to the orbital craft, from which they are relayed to Earth.

It is planned to send Mars-96 next to the mysterious planet in 1996. It will have an orbital station, a descent module with a Mars rover, and a balloon in its makeup. The launch weight of the complex is 6,580 kg and the payload is 800 kg. The scientific research program for the Mars rover includes making a radiographic inspection of the planet interior and obtaining a large series of panoramic photographs along the movement route. It is planned to use it to collect rock samples.

One of the main technical problems in creating and operating the Mars rover is controlling it over a distance of millions of kilometers. For example, it must be able to go around obstacles which were not yet in the path 20-30 minutes before (it will take radio signals approximately that much time to cover the distance from Mars to Earth and back). This craft performs the function of an expert system. Specialists on Earth will determine the strategy of operation and the Mars rover will determine the best method of performing it. The craft's range is 100 km. Speed of movement is determined by power engineering and also depends on terrain relief and the scientific program on the route traveled. Use of isotopic thermoelectric generators is envisaged as a power source.

The balloon is released from the descent module before it lands and is intended for studying not only the atmosphere, but also the surface of Mars. Heated by the Sun's rays, it flies only during the day and descends to the planet surface at night after cooling. The scanning television camera installed in the balloon gondola will permit obtaining photographs from an altitude of 200 m with a resolution no worse than 10 cm. All data are transmitted to the orbital station and relayed to Earth in the course of 10-14 days as long as onboard energy sources operate. The balloon volume is 6,000 m³, thickness of gas bag material is 6 microns and overall weight is 67 kg. The daytime ascent altitude is around 4,000 m.

The Russian Space Agency is financing the domestic Mars research program from budgetary appropriations, and scientific research is being financed by the Institute of Space Research and other scientific institutes of the Russian Academy of Sciences. Foreign firms also are taking part in this work. The Scientific Production Association imeni Lavochkin is the leading organization for creating the Mars-94 and Mars-96 automatic interplanetary complexes.

The study of distant planets is a dream of peoples of the entire Earth. And although each state today is engaged in solving its own problems, perhaps people will understand how much the reddish dot in the midnight sky means to their joint earthly existence. Knowledge of Mars will permit understanding the distant past and future of the Earth and also the history of development of life on our planet.

NBC Protection in Place of Chemical Support. What's New?

94UM05684 Moscow ARMEYSKIY SBORNIK in Russian
No 1, Jul 94 (signed to press 30 Jun 94) pp 67-70

[Article by Colonel (Reserve) V. Kadyuk, candidate of military sciences, professor, under rubric "Development of Military Theory and Practice of Troop Employment"]

[Text] The Russian Armed Forces reform which has begun presented an opportunity for updating and even revising certain concepts of modern combined arms battle, and such work already is being done. Changes and additions to the "Boyevoy ustav" [Field Manual] made in the summer of last year attest to this. The appearance of a kind of support such as NBC protection also should be singled out among them.

Like any other kind of support, from the standpoint of a systems approach NBC protection represents a complex, polyfunctional structure which includes the corresponding service and corresponding troops, systems for training cadres and conducting research in their interests, and other elements including combat training, command training and the vital activity of units and subunits of all combat arms and branches. It also has "clients" on the side as it were: entities engaged in development of regulation documents or guidance documents and in related military-scientific research. The significance of NBC protection is indisputable both in peacetime (which Chernobyl clearly proved) as well as in wartime. And to avoid idle talk here and have a common idea of the innovation, it is necessary first of all to become clear relative to the role, goals, missions and content as well as of organization and command and control of NBC protection in battle. Inasmuch as there already are several versions of viewing this problem, I would like to dwell in more detail on how those at the Frunze Military Academy picture its solution.

It may seem to some that a purely mechanical replacement of terms has occurred. The Chemical Warfare Troops allegedly were renamed NBC Protection Troops to please presently fashionable trends. This means the kind of support broken out of ZOMP [protection against mass destruction weapons] for them at one time also must be brought verbally into line. Yes, evidently not everyone understands how two new kinds of support, but with like-sounding names—the already familiar NBC protection and troop protection—can coexist.

With respect to the latter circumstance, everything falls into place here after familiarization with the provisions of regulations. While "troop protection in battle is organized and accomplished with the goal of weakening the effect on troops and facilities of various kinds of enemy weapons (mass destruction weapons, precision weapons, weapons based on new physical principles, electronic jamming) and dangerous factors of a technogenic and natural nature, preserving combat effectiveness of units, subunits and command and control systems and ensuring performance of their assigned missions," NBC protection is realized for "maximum reduction in troop losses, performance of their assigned missions during operations under conditions of NBC contamination, and countermeasures to precision weapons and means of weapon guidance and reconnaissance." The role and place of these kinds of support in modern combined arms battle clarify even more the interrelationship which has begun to show.

At the present time the Academy has posed and a regulations commission is deciding the question of including EW and troop protection in the essence of battle. In that case individual elements of NBC protection and of the former chemical support will find their worthy place in the content of battle as well.

Since the Great Patriotic War the Chemical Warfare Troops and now also the NBC Protection Troops have been targeted toward destroying the enemy with incendiary weapons. Even now this has not lost its importance. Judging from Afghan experience, in some cases missions using modern flame rocket launchers were performed that were not accessible even to such powerful means as aviation, artillery and tanks. This means that this direction in the activity of NBC Protection Troops continues to remain pertinent. At one time the use of chemical agents also was viewed as possible, but it just remained an unclaimed function of military chemical warfare personnel. Nevertheless, specialists of the NBC protection service are capable of calculating the effectiveness and safety (naturally, for friendly troops) of employment of individual kinds of mass destruction weapons particularly nuclear weapons. Together with flamethrower operators, they thereby indirectly and clearly will make a contribution to fire damage of the enemy within their abilities.

As is apparent from Diagram 1, performance of a number of primary troop protection missions is inconceivable without specific NBC protection measures. By direction of the combined arms commander, systems precluding surprise and identifying consequences are created for their realization, as are composite elements (detachments, teams, parties) for protection, aerosol countermeasures, maskirovka [lit. "camouflage", however, includes "concealment" and "deception"—FBIS] and neutralization to which necessary forces and assets of the NBC protection service and troops are assigned along with unit personnel. Thus it is possible to say with full assurance that, being an independent kind of combat support, NBC protection acts at the very same time as a component part of troop protection.

From our standpoint the essence of NBC protection must become the sum total (see Diagram 2) of methods of operations aimed at increasing troop stability toward dangerous NBC factors, at preserving combat effectiveness

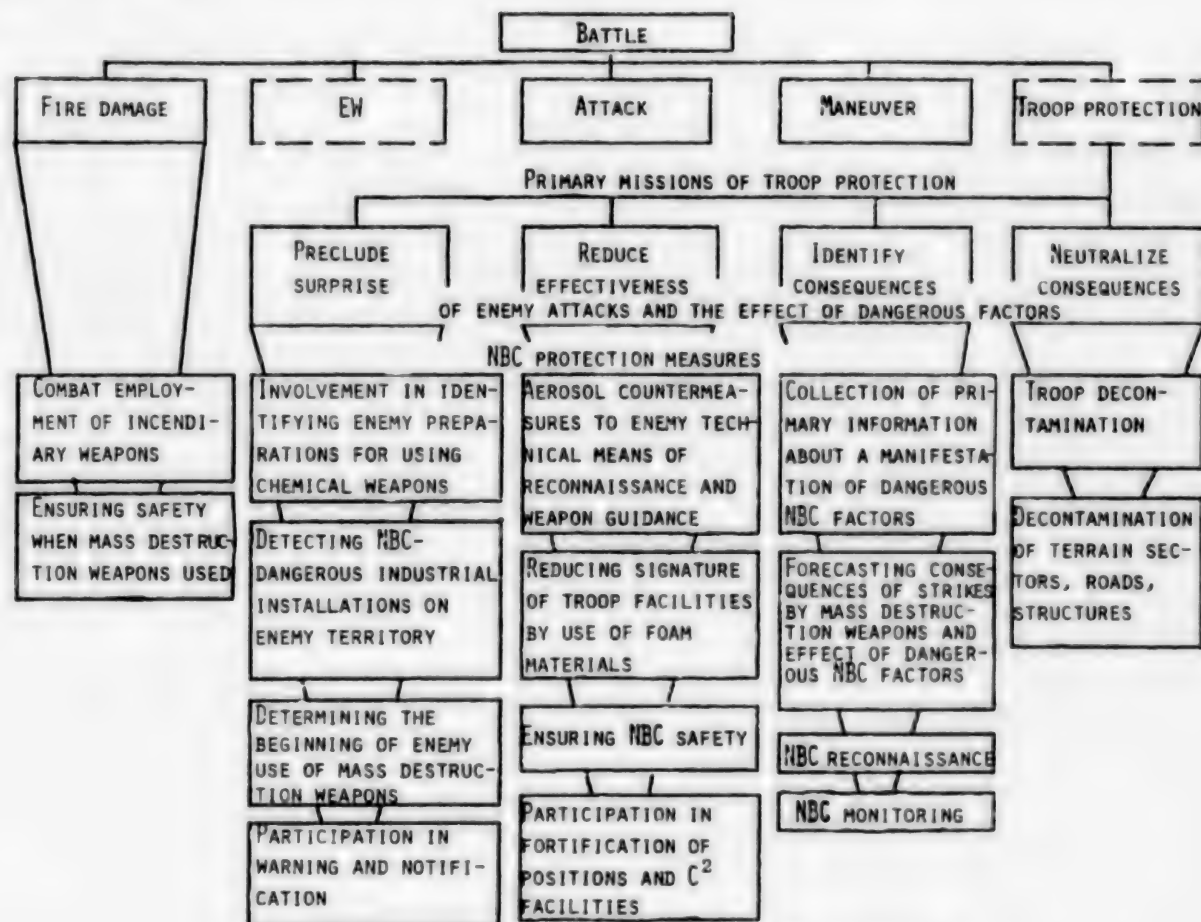


Diagram 1. NBC protection as a component part of troop protection

and performing combat missions, and at their logistic and information support. Among the methods, we will mention not only long familiar ones—use of protective features of terrain, equipment and portable means; decontamination of personnel; and decontamination of disposition areas, movement routes, armament and structures—but a new one as well: aerosol countermeasures.

Information support will be reduced to identifying dangerous NBC factors, warning and notifying troops about them, forecasting the situation's development, monitoring the situation, developing recommendations and communicating them in a timely manner to those responsible for execution. But even in the presence of a well-adjusted information chain it is difficult to count on success if troops do not receive a good-quality logistic base and the support and help of specialists. And here evidently one cannot get by with forces and assets of the NBC protection service alone. Joint efforts of essentially all combat, technical and logistic support services will be required.

This is why now it is no less important to sharpen attention on the optimum distribution of organizational and command and control functions in the area of regimental NBC protection. The question hardly is an idle one. According to

long-standing practice, everything here was made the direct responsibility of the chief of chemical service. And even now, like his predecessor, the chief of the NBC protection service is the immediate organizer of this form of support. He determines missions, forces, assets and methods, plans measures and, after their approval by the commander, communicates them to subunits and others responsible for execution. He takes part (provides assistance and exercises supervision) in training companies and battalions for battle and in particular provides NBC protection property. In so doing he naturally interworks with assigned persons of the staff and services within their range of duties.

Be that as it may, the chief of the NBC protection service is physically incapable of encompassing all measures, let alone supporting them materially or from the standpoint of command and control. The following approach seems to us to be the most sensible (Diagram 3). The chief of the NBC protection service remains the overall organizer of NBC protection. Together with the chief of staff, on an organizational plane he oversees primary elements of the regimental battle formation and is directly responsible for purely technical measures such as NBC reconnaissance and monitoring, decontamination and so on. The other chiefs are

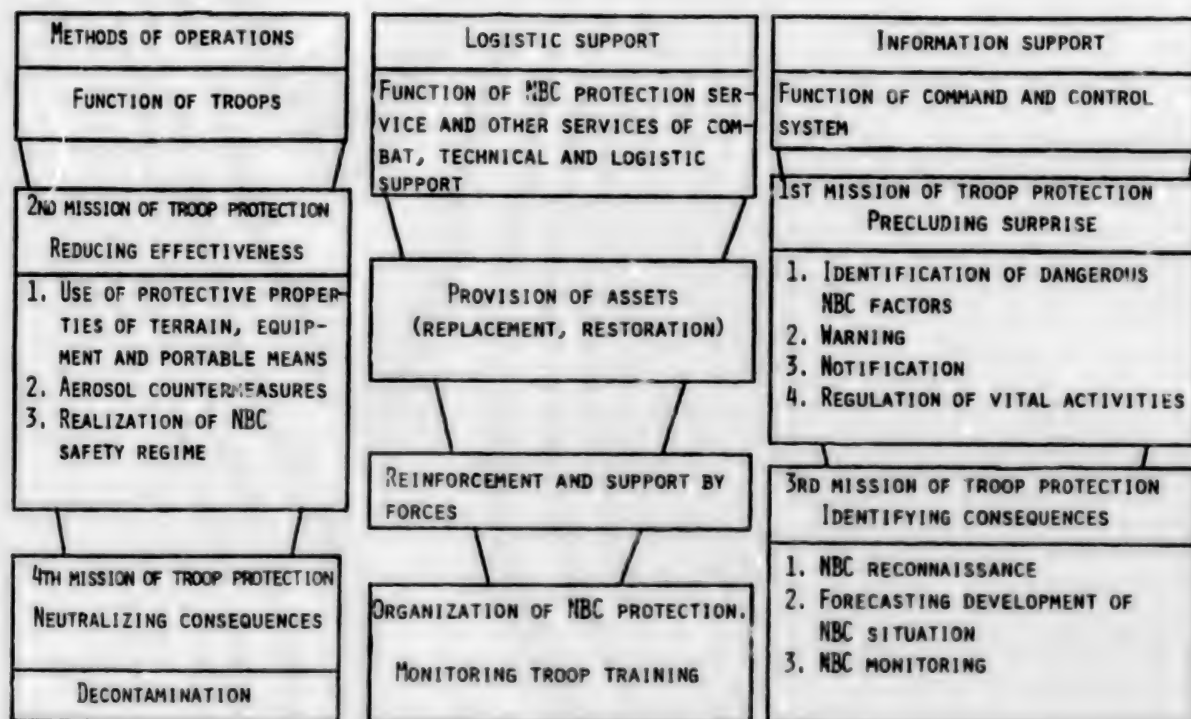


Diagram 2. Content of NBC protection

responsible for NBC protection of their subordinate elements of the battle formation and in addition see to fulfillment of goals of protection along their own directions.

Thus, among numerous missions of the kind of combat support known as NBC protection (and accordingly of the NBC protection service and troops), six primary ones can be named:

- combat employment of incendiary weapons in fire damage of the enemy;
- fulfillment of troop protection measures;
- material supply of NBC protection equipment and assets;
- reinforcement and support of units and subunits with NBC protection forces;
- informing troops and command and control systems about dangerous NBC factors and consequences of their effect;
- organization of unit and subunit NBC protection.

The discussion on this topic will remain incomplete if we also do not express our attitude toward everyday but no less urgent problems. As we know, up to now training troops for operations under conditions of NBC contamination has been accomplished within the scope of protection against mass destruction weapons. But in this form of support there was neither a structure, nor forces and assets, nor command

and control entities directly responsible for the subject of the same name. That situation engendered irresponsibility and emasculated the very understanding of the importance of serious training of personnel and subunits for operations under conditions of the use of mass destruction weapons. Now the need objectively has matured not only to determine the name of the discipline, but also to revise the time limit for its study in the system of operational and combat (including command) training. It will be a mistake if the list of topics and norms (which up to now were not quite precisely oriented, to put it mildly, toward the needs and requirements both of troops and staffs as well as of specialists of various profiles) remains unchanged.

Frunze Military Academy representatives are taking an active part in drawing up new combat training programs and other guidance documents. We will insist that the scheme for training combined arms commanders and staff officers with consideration of specialization also be updated in them. Students of our Academy as well as of other academies must have a good understanding of differences between troop protection and NBC protection, features of the NBC protection service and troops, forms and methods of its organization at the operational-tactical and tactical levels and so on. Only then is it possible to count on successful cooperation of the commander and NBC protection service chief both in battle as well as in peacetime.

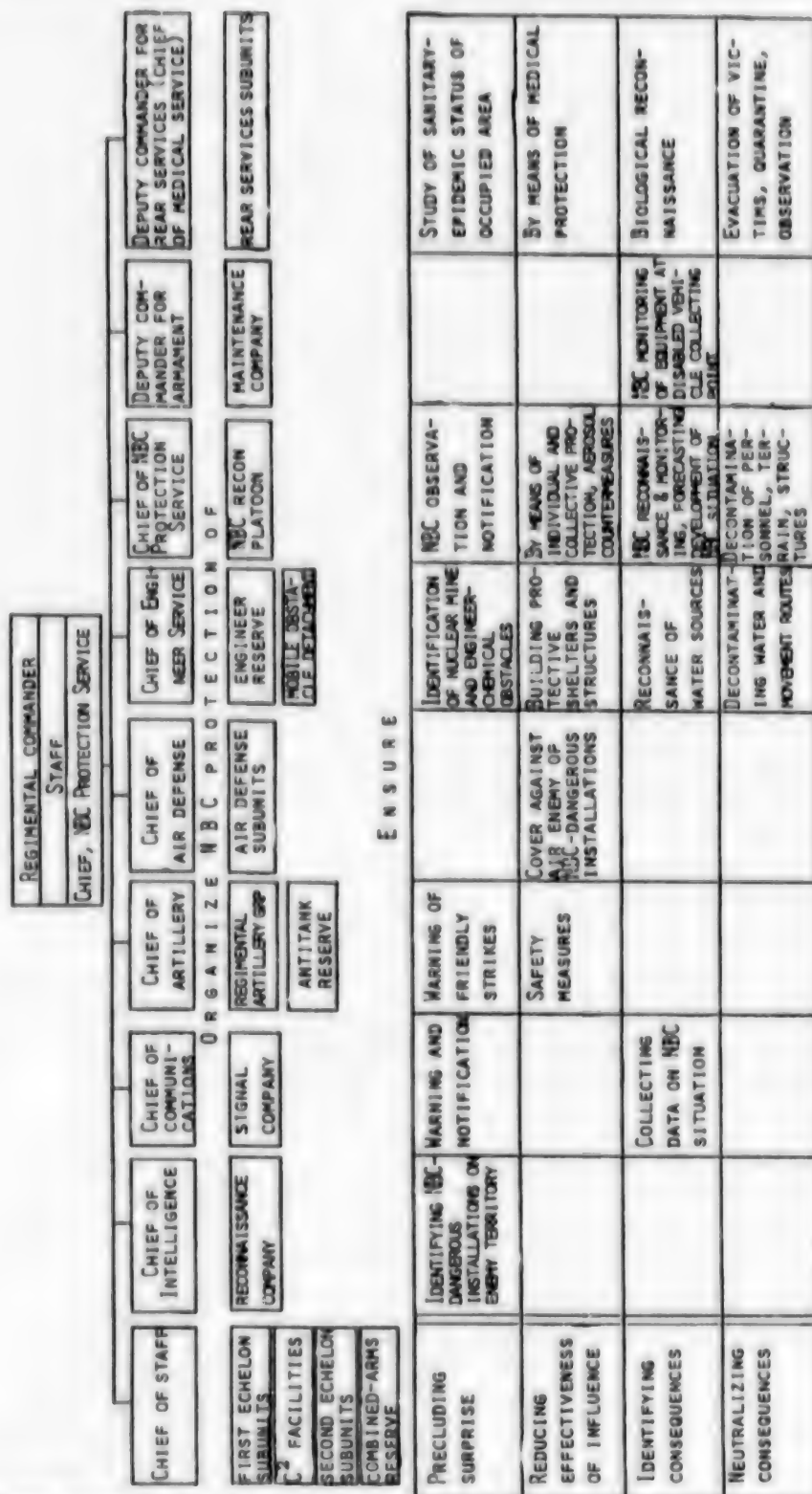


Diagram 3. Distribution of official duties in the regiment for organization and support of NBC protection in battle

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Air-to-Air Guided Missiles

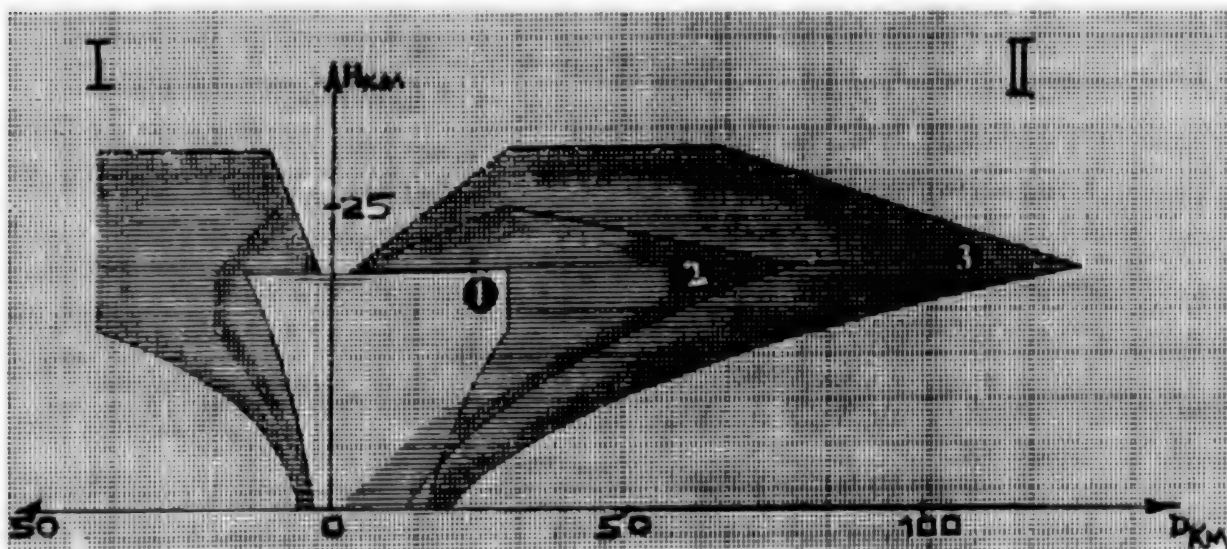
94UM0568B Moscow ARMEYSKIY SBORNIK in Russian
No 1, Jul 94 (signed to press 30 Jun 94) pp 71-73

[Article by V. Goldovskiy, team chief, Vypel Machine Building Design Bureau, under rubric "New Weapons and Equipment"]

[Text] There presently are short-range, medium-range and long-range guided missiles (see table) in the Russian Air

Force inventory. The R-73 short-range, close-combat standardized missile developed in the Vypel Machine Building Design Bureau and which became operational in 1984 belongs to the third generation and has combat capabilities of related types of missiles. The R-73 is included in the weapon complex of MiG-23MLD, MiG-29 and Su-27 fighters and their modifications and also of Mi-24, Mi-28 and Ka-50 helicopters. It also can be employed in flying craft which do not have sophisticated aiming systems.

Characteristics	Missile Type		
	R-73	R-27	R-33
Launch weight, kg	105	253	491
Length, m	2.9	4.1	4.15
Diameter, m	0.17	0.23	0.38
Wingspan, m	0.5		0.9
Control surface span, m		0.97	1.16
Maximum launch range (to forward hemisphere), km	30	95	120
Minimum launch range (to rear hemisphere), km	0.3	0.5	2.5
Maximum target flight altitude, km	0.02-20	0.02-25	0.05-28
Maximum target flight speed, km/hr	2,500	3,600	3,700
Maximum g-force of moving targets	12	8	4
Type of homing head	Passive infrared	Semiactive radar	Semiactive radar
Proximity fuze	Radar or laser	Radar	Radar
Warhead weight, kg	7.4	39	55
Engine	Single-mode RDTT [solid-propellant rocket engine]	Single-mode RDTT	Two-mode RDTT



Missile launch zones (1—R-73, 2—R-27, 3—R-33): I—to rear hemisphere of target, II—to forward hemisphere of target

The missile is used for engaging modern and future fighters, attack aircraft, bombers, helicopters, drones and cruise missiles, including those executing a maneuver with a g-force up

to 12. It permits the platform to intercept a target from any direction, under any weather conditions, day or night, in the presence of natural interference and deliberate jamming. It

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realizes the "fire and forget" principle. It is launched from an aircraft rail device. Maneuver capabilities of the platform aircraft in air-to-air combat are unrestricted.

The missile is made in a canard aerodynamic configuration: control surfaces are positioned ahead of the wing at a great distance from the center of mass. Its airframe consists of modular compartments accommodating the homing head, aerodynamic control surface drive system, autopilot, proximity fuze, warhead, engine, gas-dynamic control system and aileron drive system. The lifting surfaces (wings) have a small aspect ratio. Strakes are mounted ahead of the aerodynamic control surfaces.

It should be noted that combined aero-gas-dynamic control, which gave the R-73 high maneuver characteristics, was used in air-to-air missiles for the first time in world practice. During flight, yaw and pitch are controlled by four aerodynamic control surfaces connected in pairs and by just as many gas-dynamic spoilers (fins) installed at the nozzle end of the engine. Control with engine not operating is provided by aerodynamic control surfaces. Roll stabilization of the missile is maintained with the help of four mechanically interconnected ailerons mounted on the wings. Drives of all missile controls are gas, powered from a solid-propellant gas generator.

The passive infrared homing head supports target lockon before launch. Guidance to the predicted position is by the proportional navigation method. The missile's combat equipment consists of an active proximity (radar or laser) fuze and impact fuze and a continuous-rod warhead. The engine operates on high-impulse solid propellant and has a high-tensile steel case. In the opinion of foreign specialists, the R-73 considerably surpasses similar missiles of other countries in combat capabilities: AIM-9L Super Sidewinder (USA), R-550 Magic (France) and ASRAAM (UK).

The R-27 standardized medium-range guided missile became operational in 1985. It belongs to the third generation and is intended for MiG-29 and Su-27 front fighters and their modifications. The R-27 is capable of engaging manned and unmanned targets in long-range and close maneuverable air-to-air combat. It can be employed both in individual as well as group operations of platform aircraft. It supports the intercept of targets moving from different directions against the background of the earth's and water's surface in any weather conditions.

The R-27 is made according to a modular principle and is the base for a family of missiles equipped with various types of homing heads and propulsion systems. For example, the R-27R is equipped with a semiactive radar homing head which locks onto a target on the trajectory. It is made in a canard aerodynamic configuration with an axially symmetric cruciform arrangement of aerodynamic surfaces. Control surfaces of original (so-called "butterfly") configuration permitted using one and the same surfaces both for missile yaw and pitch control as well as for its roll stabilization. Each of the four control surfaces has an independent hydraulic drive with a pump-accumulator system for supplying pressure fluid. Canard surfaces are mounted ahead of them. Changing their size ensures identical balance characteristics of the missile when the homing head is replaced.

The R-27R is equipped with an active radar proximity fuze and impact fuze and a continuous-rod warhead. It can be launched both from an aircraft rail device as well as from an aircraft catapult device. After being launched, the missile is led aside to ensure the aircraft's safety. It is guided to the target by a combination method according to the proportional navigation method: inertially with radio-correction of trajectory in the initial flight phase, and homing in the terminal phase. This provides for reliable target lockon at long ranges from the platform aircraft. The missile can be guided along special trajectories to create favorable conditions for homing head and proximity fuze operation. It is capable of going around a plume of passive jamming, of being moved out of the main lobe of the platform's radar, and of approaching a low-flying target from above at a given angle. In its characteristics the R-27R concedes nothing to the best foreign analogues, particularly the U.S. AIM-7M Sparrow missile, and surpasses it in certain combat capabilities.

The R-33 long-range missile was created for arming MiG-31 fighter-interceptors. It became operational in 1980 and belongs to the second generation. It is capable of engaging SR-71 strategic reconnaissance aircraft, B-52 and B-1 bombers, aircraft of front and transport aviation, and also helicopters and cruise missiles. The R-33 may be used at any time of day, under any weather conditions, in the presence of natural interference and deliberate jamming to engage targets flying against the background of the earth's and water's surface. The missile is made in a normal aerodynamic scheme and has a cruciform configuration. Lifting surfaces of the R-33 are made with a low aspect ratio and two control surfaces are folding for its semirecessed accommodation beneath the platform's fuselage.

Control and stabilization in three angles are accomplished with the help of four mechanically unconnected (differential) aerodynamic surfaces activated by gas drives. The missile is equipped with a semiactive radar homing head that locks onto a target on the trajectory. Guidance of the R-33 to a target is a combination: inertial in the initial phase and homing in the terminal phase. This is the first domestic air-to-air missile to use an onboard digital computer, which has stable characteristics compared with analogue devices. It is fitted with an active radar proximity fuze and impact fuze as well as with an HE-fragmentation warhead. It is launched from an aircraft catapult device. After launch, the missile is led a safe distance away from the platform.

The Vypel Machine Building Design Bureau has been working to create fourth-generation missiles since the beginning of the 1980's. Through use of high-speed digital computers, these models will possess qualitatively new capabilities compared with missiles of previous generations.

Fire Extinguishing Systems

94UM0568C Moscow ARMEYSKIY SBORNIK in Russian No 1, Jul 94 (signed to press 30 Jun 94) pp 76-77

[Article by G. Marchenko, doctor of technical sciences, I. Yakushev, doctor of technical sciences, and V. Petrush-evskiy, candidate of technical sciences]

[Text] The Kazan State Scientific Research Institute of Chemical Products specializes in developing formulas and technologies for production of powders for small arms and ejection

devices, polymer and composite materials, and articles and commodities on their basis; and in reprocessing obsolete powders into products of national economic importance.

Major accidents which have occurred in recent years at various installations of the national economy, accompanied by fires and explosions which produced considerable material damage, demonstrated the need for developing a new class of fire extinguishing systems based on remote delivery of fire extinguishing agents to the center of conflagration and on ensuring their highly efficient pulsed effect.

The main problem in ensuring effective fire extinguishing is to have a reduction in time for combat deployment of subunits and a swift, powerful effect on the fire center. An analysis shows that capabilities of traditional equipment essentially have been exhausted. Therefore a search presently is under way for fundamentally new fire extinguishing methods and means. In the course of range testing and in putting out real fires it was established that it is possible to reduce combat deployment time and increase the effectiveness of work through remote delivery of extinguishing

agents to the fire center and assurance of their pulsed effect. This goes for fire extinguishing powder compounds to the greatest extent. Studies show that the pulsed delivery of fire extinguishing powder compounds to a zone of combustion sharply strengthens their effect because of the penetration of the compound's particles having high kinetic energy into the interior of a burning surface.

Systems created on the basis of weapons and military equipment being freed up as a result of conversion (see table) possess wide capabilities for remote, highly accurate delivery of powder fire extinguishing agents to a fire center. Their characteristics in terms of range, accuracy and intensity of delivery of fire extinguishing agents permit substantially expanding capabilities and increasing the effectiveness of fighting fire. In addition, the systems possess increased protection against the effect of flame, high temperatures, harmful combustion products and destruction, which improves operating conditions and essentially precludes losses of firefighting subunit personnel.

Combat Equipment Used for Fire Extinguishing

Equipment	Range of Fire, m	Rate of Fire, rounds/min	Weight of Fire Extinguishing Substance, kg	Area of Application
Hand grenades and fire extinguishers	20-30			Local centers of fire within buildings and structures
Grenade launchers	20-150	4-7	1-3	Local centers of fire within buildings and structures
Mortars	200-2,000	4-10	8-25	Forest fires, spills of highly inflammable fluids, fires on roofs of tall objects
Artillery piece	*	*	*	Bombardment of burning wellhead
Multibarrel mounts	50-100	4 volleys from 2-12 barrels	20-30 in one barrel	Wide-scale centers of fire on the terrain, fires of ground and airborne means of transportation, and of oil and gas blowouts
Rocket projectiles	200-1,500	*	*	Wide-scale centers of fire on the terrain
Aerial bombs	*	*	*	Wide-scale centers of fire on the terrain

Note: *—No data.

The large number of kinds and the difference in scale of fires, the difference in features and conditions for extinguishing, and the unforeseen nature of situations which arise permit drawing a direct analogy between actions by firefighting units in putting out major centers of ignition and actions of military subunits under combat conditions. It is obvious that in both cases success is possible only in the presence of the most modern means. Therefore, converting military equipment for fighting fires and creating appropriate ammunition are some of the most important directions in conversion. In particular, specialists of the Kazan State Scientific Research Institute of Chemical Products deem it advisable to use a multibarrel (14-20 barrels) fire extinguishing mount for these purposes. It is intended for suppressing powerful centers of fire (oil and gas blowouts, highly inflammable liquids) and extinguishing forest fires at a distance of 50-100 m.

The extinguishing effect is achieved by delivering a high-speed flow of special, finely divided powder in volleys from one or more barrels. The powder, weighing 15-25 kg,

is in an easily disintegrating container, which is fired when a propellant charge (assembled using series-produced elements) is initiated. The advantage of this fire extinguishing method is the absence of a destructive effect, which ensures safekeeping of structures and equipment.

The mount can be installed on the base of light armored equipment (BMP-1 or BTR) and on powerful trucks (KamAZ, KrAZ, BelAZ) as well as on transportable carriages or platforms. Compared with using T-55 and T-72 tanks, use of the BMP-1 and BTR as a base permits increasing mobility and promptness of actions in a fire without reducing the degree of crew protection. In addition, four such mounts can be transported in an Il-76 and two in an An-22 aircraft and be dropped to the fire site on airdrop platforms. To suppress wide-scale centers of fire (forest, steppe) at a distance of 200-2,000 m, it is proposed to convert the 2S12 portable mortar system on the base of the GAZ-66 motor vehicle. In its 82-mm and 120-mm rounds, the fire extinguishing powder (or liquid fire extinguishing compound), weighing 10-25 kg, is accommodated in a

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cylindrical container made of aluminum or plastic and supplied with a standard fin assembly. It is fired with the help of propelling charges assembled from series-produced elements. The container is actuated in the fire center by an impact fuze, which initiates a burster charge in the form of a bunch of detonating cords placed along the container axis.

Using a battery of four mortars, it is possible to deliver 240 kg of fire extinguishing compound (liquid, powder) to the fire center in one minute. One mortar, which has a unit of fire of 30 rounds, permits covering an area of 1,500 m² with fire extinguishing compound in five minutes. At the present time the internal and external ballistic parameters of rounds have been selected and principal elements of the container and propelling charge have been worked out. A fire extinguishing round for the RPG-7 shoulder-fired antitank grenade launcher is intended for extinguishing local centers of fire, including within burning industrial and residential spaces. In this round the fire extinguishing powder compound weighing 3 kg is contained in a cylindrical cardboard-paper container with plastic tail end. It is fired to a distance of 50-100 m using a series charge and is guaranteed to go through a window opening. A burster charge in the form of a bunch of detonating cords placed along the container axis is initiated in the fire center by a pyrotechnic delay element and flame detonator 3-5 seconds after launch. The rate of fire (4-7 rounds/min) permits achieving high effectiveness in extinguishing a fire.

The overcaliber fire extinguishing round for the 40-mm shoulder-fired launcher based on the GP-25 underbarrel grenade launcher can be used for extinguishing small centers of fire at a distance of 20-25 m. The round's cylindrical paper container with a central perforated tube contains 1 kg of fire extinguishing powder. It is propelled by a powder charge which transmits a fire pulse through a pyrotechnic delay element to the powder burster charge in the perforated tube. The design uses elements from series-produced charges. The suggested remote pulsed fire extinguishing systems permit accomplishing a wide range of missions, from actions in the immediate proximity of a fire center to massive bombardment by extinguishing rounds of terrain gripped by fire. They also can be used for other purposes, particularly ecologic (chemical and biological treatment of agricultural lands and forest areas, neutralization of harmful liquid and gas discharges, radioactive decontamination of radioactive substances). The suggested methods concede nothing in mobility, promptness and scale of effect to traditional methods being realized using aircraft. At the same time, because of delivery accuracy they ensure a measured delivery of appropriate substances to a strictly limited territory. The effectiveness of work thereby is increased and the expenditure of these substances is reduced.

'Invisible Aircraft'

94UM0568D Moscow ARMEYSKIY SBORNIK in Russian
No 1, Jul 94 (signed to press 30 Jun 94) pp 87-89

[Article by Colonel S. Petrenko, candidate of military sciences]

[Text] The Russian and foreign press repeatedly have told about the F-117A aircraft, but it was basically a description of the aircraft's technical capabilities, which are provided by use of stealth technology (minimum level of

radar, infrared, visual-optical and acoustic signature). Meanwhile, the "invisible aircraft" underwent a serious break-in in various hot spots.

The Americans used F-117A fighters in a real operation for the first time in Panama, setting for them the goal of ensuring high bombing accuracy. On the night of 19/20 December 1989 the aircraft took off from Tonopah Airfield. They were repeatedly refueled in the air during a nonstop flight of many hours to the target (almost 10,000 km). Two BLU-109 bombs with a warhead weighing 900 kg and with a laser guidance system were dropped on the target (Panamanian National Guard barracks at Rio Hato) in the total absence of enemy opposition.

In assessing the pilots' actions, a U.S. Air Force representative declared in late December 1989 that the assigned mission was performed successfully. But reports soon appeared in the western press that the bombing at Rio Hato had been accomplished with a large deviation from the target. The reasons for this were weather conditions not inherent to desert terrain of the state of Nevada, where practices were held: low cloud cover, high air humidity, and heavy wind restricted the capabilities of the infrared sets of the bombsight and navigation system. But the failure was linked chiefly with serious pilot errors.

After analyzing the situation, the Air Force command made a number of changes to the flight personnel training program. In particular, there was a sharp increase in the number of integrated exercises during which capabilities of the logistic support system, set up in case fighters were restationed to other air bases, were checked.

The time for new testing of the aircraft arrived during Operation Desert Storm. By the beginning of the war the overall number of F-117A fighters in the Persian Gulf area had reached 45. The war against Iraq began with an offensive operation by multinational forces [MNF] aircraft which lasted three days. There were 668 combat aircraft in the first strike, including 42 F-117A's, 10 of which proceeded ahead of the strike elements. Their approach to the attack targets was made at a strictly planned time, and delivery of strikes was precisely coordinated with cruise missile strikes.

The stealth fighters were assigned the mission of knocking out very important state and military command and control facilities located in the center of Baghdad. The aircraft penetrated the air defense system and moved to the given targets with very high accuracy, although they had taken off from the distant airfield of Khamis-Mushait. The combat mission lasted an average of around six hours with a flight range of over 3,000 km (with two aerial refuelings). The strike against priority targets in Baghdad was delivered at the moment MNF aircraft penetrated the peripheral Iraqi air defense zone. Targets were attacked by single aircraft fitted with two BLU-27 guided aerial bombs, which were dropped at an interval of a few seconds.

The IPA bombsight and navigation system installed in the F-117A supported high bombing accuracy. The Air Force Main Headquarters building was destroyed by a direct hit of the very first bomb dropped, which pierced around 10 floors, reached the foundation and blew up. Subsequently at press conferences journalists were shown video recordings of the precision use of aerial bombs with the laser

homing system. For example, they would enter the open door of a depot or a building elevator shaft. Direct hits were clearly visible on ATT Company buildings and on one of the structures of the presidential complex.

At the beginning of the offensive air operation 32 F-117A's operated in combat formations of the air defense suppression elements and of the first strike elements, to which 40 targets had been assigned. They delivered strikes against the most important targets on the territory of Iraq and Kuwait and also on two operational-tactical missile bases in western Iraq. In 24 hours the F-117A's destroyed around 30 percent of all targets struck by MNF aircraft, which flew over 1,000 missions. It must be taken into account that the Iraqi air defense system still was operational and represented a serious threat to attacking aircraft.

On the second day around 28 stealth aircraft were put into action, 16 of which made flights at night and 12 in the evening. This time the Ministry of Defense building and State Security Forces headquarters became the main targets of engagement.

And the low-signature fighters continued to deliver strikes on the third day, primarily against priority targets on the territory of Iraq. They successfully performed missions of which aircraft of other types were incapable. In particular, on the day before, two squadrons of F-16's tried to destroy the Iraqi Nuclear Research Center near the city of Ozirag. A total of 75 aircraft, including cover aircraft, took part in the operation, but the bombing produced no results and losses to powerful point air defense fire turned out to be rather telling. In performing this mission eight F-117A's approached the target undetected without any cover and, dropping 16 guided aerial bombs, destroyed two reactors and damaged a third and also destroyed several buildings on the Center's grounds.

Subsequently the MNF command gave up delivering massed air strikes, shifting to group and individual strikes, adjusting them constantly with consideration of the change in the situation and intelligence. The mission of destroying Scud operational-tactical missile bases and individual launchers acquired priority importance, and stealth aircraft also were used widely to perform it. In addition, the F-117A's were used for bombing bridges with laser-guided aerial bombs. While F-15E's, F-16's and F-18's were unable to destroy a single one of the 42 most important bridges in 100 sorties, the stealth aircraft coped with the assigned mission successfully. These aircraft also gave a good account of themselves in bombing Iraqi oil pipelines, through which oil flowed for filling the defensive ditches in Kuwait.

While precision weapons were not used at all or were used episodically in all other wars and local conflicts with massive participation of aviation, in the war against Iraq they were employed rather widely on F-117A's. While the MNF command assigned 8 combat and 30 support aircraft for engaging one target, no more than two aircraft were included in the stealth element, which provided a noticeable saving of ammunition and material resources.

Having limited capabilities to search for ground targets, F-117A crews needed real-time intelligence, including information on coordinates and impact zones of air defense weapons. Intelligence support to the fighters was provided

by intelligence of all branches of armed forces which took part in the war, including a grouping of U.S. space assets with 35 satellites, around 70 RC-135, TR-1 and RF-4C reconnaissance aircraft and E-3A Sentry AWACS radar early warning and control system aircraft, as well as shipboard and ground COMINT and ELINT systems. As a result, coordinates of the main fixed air defense targets and installations were determined with high accuracy. These data would be loaded into the fighters' onboard computers before taking off on a combat mission.

In supporting combat sorties of F-117A aircraft, the use of radar [sic; probably electronic] warfare assets had a number of features. As a rule, the fighters penetrated the enemy air defense system covertly; jamming might only reveal them. Therefore EF-111 Raven and EA-6B Prowler EW aircraft would begin jamming Iraqi radars already after completion of bombing by stealth fighters.

New Pistol

94UM0568E Moscow ARMEYSKIY SBORNIK in Russian No 1, Jul 94 (signed to press 30 Jun 94) p 89

[Article by M. Dragunov, candidate of technical sciences, expert-designer of Izhevsk Machinery Plant, under rubric "Exhibitions"]

[Text] In SHOT Show, one of the latest annual small arms exhibitions put on in the United States, the Colt Manufacturing Company¹ displayed the All-American 2000 pistol, which attracted particular attention of specialists. Its design differs fundamentally from that of the M1911A1 pistol manufactured for almost 80 years. The weapon was developed for the 9-mm Parabellum cartridge. Its automatic action operates on the principle of using the short-stroke barrel recoil energy. The barrel is locked by its rotation relative to the longitudinal axis on five locking lugs. The main element of the locking system is a slide with cam slot that displaces along guide frames and interworks



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with the leading lug on the barrel, which is bevelled to direct the cartridge as it is fed.

A "self-cocking only" principle and a striker arrangement is used in the hammer and trigger assembly. The merits of this principle include a high degree of readiness for commencing fire and simplicity of handling the pistol. Among the drawbacks is increased trigger travel (15-20 mm) and heavy trigger pull (40-50 N). Such characteristics are fully acceptable for self-defense pistols used at close ranges (3.5-13 m), but this weapon is inconvenient for lengthy firing at long ranges.

After firing, the firing pin comes to rest not on the sear notch, but on the automatic safety. Each time the trigger is squeezed, it is cocked and released. A similar arrangement was used in early 20th century pocket pistols such as the Model 1913 Le Francais. Its merits include the absence of a protruding hammer, which makes the pistol more acceptable for concealed carrying. Among the drawbacks is the difficulty of choosing the optimum trigger pull for reliable ignition of the percussion cap. In particular, there are up to two misfires per magazine in firing cartridges of the Czechoslovak firm of Sellier+Bellot, which have low-sensitivity percussion caps, from the All-American 2000.

Basic Technical Characteristics

Caliber, mm	9x19 Parabellum
Overall length, mm	190
Barrel length, mm	114
Weight less cartridges, kg	0.820 (with plastic frame) 0.935 (with aluminum frame)
Magazine capacity, cartridges	15

The pistol uses a plastic frame (the first lot of 3,000 weapons was manufactured with an aluminum frame). U.S. specialists highly assess the ergonomics of the grip, but German experts believe that its tilt angle is small, because of which the center of impact drops in high-speed firing. The reversible magazine catch and the bolt catch provide convenience in handling the pistol and permit firing both from the right as well as the left hand. Despite the heavy trigger pull and long travel, the All-American 2000 pistol demonstrated a sufficient grouping when firing from a rest at 25 m and with high-speed firing to short distances (from 4.5 to 14 m). The model is assessed as a good weapon for law and order and self-defense security forces which will be used basically at a range up to 13-15 m.

Footnotes

1. Oldest small arms firm in the United States. Its present market share of the overall volume of pistol and revolver production in the country reportedly does not exceed 6-8 percent.

Features of Contract Service

94UM0568F Moscow ARMEYSKIY SBORNIK in Russian No 1, Jul 94 (signed to press 30 Jun 94) pp 90-93

[Article by Major General of Justice (Retired) V. Ivakhnyuk, under rubric "ARMEYSKIY SBORNIK Legal Service"]

[Text] Radical changes presently are occurring in all spheres of our society. Reforms also are being carried out in the Russian Federation Armed Forces which require the overcoming of formed stereotypes of thinking and actions, each person's awareness of his or her civilian and military duty, and increased knowledge, professional qualities, efficiency, precision, execution and discipline. But reform is not limited to this. It concerns all problems connected with organization and performance of military service.

Just what is included in the concept of "military service"? Above all it is a civilian duty and a profession. Historical traditions show that military labor always has been and will be necessary, and it is always highly esteemed, for military service is a special kind of citizen state service distinguished by many specific features.

The legal foundations of military service are determined by legislative acts adopted in 1993—the Russian Federation Constitution, provisions of military doctrine, the laws "On Defense" and "On Military Obligation and Military Service," general military regulations and other legal acts.

According to Article 59 of the Russian Federation Constitution, "defense of the homeland is the duty and obligation of a Russian Federation citizen." The "Basic Provisions of Russian Federation Military Doctrine," approved by the Russian Federation Security Council, were adopted by Russian Federation Presidential Edict of 2 November 1993. Basic directions of sociopolitical assurance of our state's military security draw attention along with others in this legal act; among them is the formation of citizens' moral-psychological readiness for defense of the homeland, accomplishment of a set of state measures for elevating the prestige of military service, establishment and improvement of a system of military-patriotic education and predraft training, assurance of social protection of servicemen and their families as well as of persons discharged from military service, and the interworking of military command and control entities with state and public organizations.

Realizing basic goals, principles and tasks of organizational development and formation of the Russian Federation Armed Forces is possible only with a mixed system of manpower acquisition for all branches and combat arms, one that combines volunteer contract service with service based on the conscription of citizens.

In this interrelationship Article 1 of the Russian Federation Law "On Defense" states that the Russian Federation Armed Forces are created and military obligation of Russian Federation citizens is established for defense using means of warfare. And Article 9 provides that in accordance with the law, Russian Federation citizens fulfill a military obligation or volunteer for contract military service. Thus, laws adopted last year define the kinds of military service: under military obligation, on a contract basis, and alternative civilian service.

Let us consider them in order. The concept and content of military obligation is revealed in Article 1 of the Russian Federation Law "On Military Obligation and Military Service." It states that military obligation of Russian Federation citizens provides for their military registration on reaching the age of 17, compulsory training for military

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service prior to conscription, entry into military service, performance of military service, presence in the reserve, and military training in wartime.

All male citizens from 18 to 27 years of age are obligated to perform military service if they do not have the right to an exemption or deferment from the draft. Under Article 20, persons who are pronounced unfit or have limited fitness for military service because of health and persons who are performing or have performed military service or alternative service are exempted from the draft. Persons with a conviction that has not been removed or that is outstanding for commission of a grave crime are not subject to conscription.

In accordance with Article 36 of the Law "On Military Obligation and Military Service," performing duties of military service is understood to mean participating in combat operations; performing official duties established by military regulations; performing alert duty (combat duty); participating in exercises and ship deployments; fulfilling an order, instruction or mission issued or assigned by the commander (officer in charge); being on official detached duty or being medically treated; taking part in military training sessions; assisting law-protection agencies in supporting legality and law and order; and other actions of a serviceman recognized by the court as having been taken in the interests of society and the state.

The content and procedure for performance of peacetime military service are determined by the above Law, by the Statute on the Procedure for Performance of Military Service, and by military regulations.

Terms of conscripted military service are established by Article 37 of the aforementioned Law: 18 months for servicemen of all branches and combat arms; 24 months for those performing conscripted service on ships and vessels and in combat support shore units; and 12 months for those with a higher education and performing conscripted service. Those who have undergone military training under the reserve officer training program may be called up for military service for 24 months.

In accordance with Paragraph 3, Article 59 of the Russian Federation Constitution and Article 1 of the Russian Federation Law "On Military Obligation and Military Service," in case performance of military service contradicts his convictions or religion and in other cases established by federal law, a citizen of Russia has the right to replace it with alternative civilian service.

A new kind of military service, contract service, introduced in the Russian Armed Forces as an experiment in January 1993, deserves special attention. What is its special feature and distinction from conscripted service?

Conscripted service is compulsory for each citizen regardless of his wishes, but for a term strictly established by law. Contract service is accomplished voluntarily, at the citizen's desire, but with the obligation to fulfill all its requirements for the contract term provided by law. At the same time, just a desire to enter into contract military service is not enough, since according to law this is done on the basis of competitive selection. What does this mean? We find an explanation in the fifth section of the Russian Federation

Law "On Military Obligation and Military Service." Article 32 points out that citizens who enter into contract military service are subject to medical examination to determine fitness for military service and must conform to established requirements for general educational qualification, level of professional training, moral-psychological qualities, and fulfillment of physical training standards.

Let us examine the kinds of contracts for performance of military service envisaged by Article 33 of the Law "On Military Obligation and Military Service." Three are established.

The first kind is conclusion of a contract for performance of military service in cadres of the Russian Federation Armed Forces, other troops, Foreign Intelligence agencies or Federal Counterintelligence Service agencies. How is this to be understood? According to part two of the aforementioned article, a serviceman performing military service under the indicated kind of contract may be assigned to a military position with transfer to a new duty station without his consent. This means that this must be stipulated in the contract, and then it will be clear to both parties who concluded it that the serviceman has expressed his consent to serve where he is ordered to serve within the period for which the contract was signed.

The second kind is conclusion of a contract for performance of military service in cadres of a specific military unit. The conditions are attractive and tempting, but what is to be done if an official requirement arises to change the stationing location of this specific military unit? Evidently such an option also must be envisaged and stipulated in the contract.

The third kind is conclusion of a contract for performance of military service in a specific position in a specific military unit. The conditions of service in one capacity and in one place for the period of the contract are specified by this kind.

With consideration of requirements for manning military units of all branches and combat arms, the first kind of contract service predominates in this stage of troop reform, i.e., with the condition of serving where necessary for the period provided by the contract. The other two kinds of contract service also are used, but when there are specific opportunities and real necessity.

According to Article 34 of the Russian Federation Law "On Military Obligation and Military Service," a contract is concluded for 3, 5 or 10 years. When the serviceman who is concluding a contract is approaching maximum age for being on military service, the contract is concluded for the remaining period if it does not exceed that prescribed. A contract for 3 years is concluded with persons entering contract military service for the first time in military positions of privates and sergeants. A contract is signed for 5 years with those entering a military position filled by warrant officers or officers. And it is signed with cadet servicemen of a military educational institution for the entire period of study plus 5 years of military service after completion of study.

The age of citizens wishing to enter into contract military service is established by Paragraph 1, Article 30 of the Law

"On Military Obligation and Military Service." Male citizens from 18 to 40 years of age and female citizens from 20 to 40 years of age have the right to conclude the first contract on performance of military service.

All servicemen are assigned to the reserve after being discharged at the expiration of the term of conscripted or contract service. Citizens who have undergone training under the reserve officer training program in military chairs at state institutions of higher professional education, who have not performed service because of deferment or who have performed alternative service also are in the reserve. Article 51 of the Law "On Military Obligation and Military Service" establishes three categories of persons in the reserve, determined by age, military rank, and the opinion of a military medical board on degree of fitness for military service. Privates, sergeants and warrant officers are in the reserve up to age 50, junior officers up to age 55, and

senior-grade and general officers up to age 60. Female citizens with military rank of officers are in the reserve until age 50 and those without such rank until age 45.

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